

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

 **I**length of discussion were the ruling factor in settling the air problem for this country, the final decision as to the future of aviation should have been easily reached last week in the House of Lords in connection with Lord Montagu's motion that "This House considers that the development of aviation for the purposes of war can no longer be efficiently carried on under the present system of the divided control and responsibility of two separate departments; and that the time has now arrived when the supply of men and

Airing Aviation in the Lords. materials should be concentrated under single control, at the same time leaving the executive power over naval and military aircraft with the Army and Navy as at present."

Taking the debate, which occupied the major part of two sittings in the Upper House, as a whole, we are afraid little that was new transpired. If for nothing else, however, the "airing" at length of the views of different members was welcome inasmuch as it afforded an early opportunity to the President of the new Air Board, Lord Curzon, to give some slight insight into the aspect in which he sees the objects of recent agitation for a more extended air policy. It also clearly emerged that the concensus of opinion was in favour of an *ultimate* third service and independent Air Ministry, whatever objections may be in the way of such a revolution in accepted

practice under the present unprecedented conditions. That this was the considered opinion of the Lords was forthcoming from the fact that Lord Montagu was unable to obtain the one necessary teller to enable him to take the sense of the House. The hearing accorded him, however, was sympathetic throughout, and the appeal of Lord Curzon was undoubtedly responsible for the final action of the members, so as to give the new Air Board a chance to demonstrate its ability and power to handle the problem without unduly upsetting the existing machinery of the Services. Without much doubt we think this was also the feeling engendered in Lord Montagu's mind at the finish, and that he was not averse to the "not proven" character of the termination under the circumstances. Every action and suggestion of Lord Montagu has throughout been solely directed at ensuring for the country the best that brains and ability can supply in furtherance of every patriot's wish to see Great Britain in control of the air, as she is of the sea. How well founded is the hope that the future will see the department of the air in the position to look after its own affairs entirely may be gathered from the very straight opinions in this connection by Lord Curzon:—"I think an Air Ministry or Air Department is destined to come," the new Air Board President said, and continued, "I see before myself, before many years have passed—it may even be sooner—I paint to myself a dream of a single service under a single head, under a single roof, with a single organisation. Such a unification I cannot believe to be beyond the administrative genius of our race. But if I am right in that, I would sooner see it come—as in the past few months I have seen military compulsion come—as the result of a concordat between all those who are interested in the matter, as the result of a cordial acceptance of the principle by both services and both departments, with the avowed support of the Secretary of State for War and the First Lord of the Admiralty."

We may rest content that with so strong a view of what is to come as this, a view further emphasised a few moments after by a confession of enthusiasm second to none in the work of the air, a strong air policy is likely to be entered upon under the new régime:—"Ever since the beginning of the war I have felt convinced," Lord Curzon said, "that the Air Service has a great future not merely in determining the issues of the war, but in the part which it will play in the defence of this country and in the warfare of the future. I believe the time will come when the air arm will play a part in warfare scarcely conceivable now."



The First Meeting of the New Air Board at Carlton House Terrace.—Lord Curzon, the President, and Lord Northcliffe, who attended to give his views, arriving.

If the work accomplished in the near future by the Air Board is in any way comparable with the programme sketched out by Lord Curzon, we shall indeed have to be thankful for the past agitation which has led up to this much more satisfactory state of affairs. When the President came to more detailed dissection of the work in contemplation by the Board, he touched upon a very big subject which has in it the elements of much trouble. This thorny point was the institution of a national factory, the suggestion being certainly qualified by the opinion that it would be absolutely dangerous for the Government to rush to a conclusion in this connection. That the industry so newly and rapidly created to the salvation of the country should be garrotted out of existence by the institution of a single Government factory is unthinkable. From a national point of view under those conditions there would be the ever-existing danger of falling behind other countries in peace times in maintaining efficiency. What the effect of that would be when war once more threatened is not pleasant to contemplate. To private enterprise, brains and competition the present state of strength is undeniably due. To crush individual thought and hamstring progress by placing upon our chances of Aerial Supremacy the fetters of official inertia in the form of a hide-bound Government factory, would probably be about the most unwise course to pursue. The country has in the past had private firms entirely to thank for the supply of "the goods" necessary to maintain Britain in its world-power position, and it is only by generous encouragement, to the good of the Empire and the entire world, both in

times of peace and strife, that this country can hope to be in the position at a moment's notice to meet the demand for maintaining that premier position indefinitely. It is to be hoped that the President of the Air Board will always have permanently in mind the danger as expressed by him during his House of Lords speech of any such departure. That there is room for the most elaborate and extensive Government organisation for practical research and experiment there is no manner of doubt. But the commercial side of aircraft should be non-existent as a Government department. There need be no fear of unduly inflated cost. Already so many leading firms are in the industry for good that competition will automatically regulate this side of the question, and moreover will encourage and develop progress by the employment of the best brains obtainable, to go one better each time in attempting to attain more and more efficiency in lift, speed and every other desirable factor in arriving at that ultimate control in the air which will lead to the widest possible use of the aeroplane, outside the realm altogether of military aeronautics, for commercial and other purposes in the years to come.

* * *

The New Air Board. Following the announcement of the full composition of the Air Board, no time was lost in commencing operations. At the first meeting, on Friday last, at the offices in Carlton House Terrace, all the members were present, and both the secretaries were in attendance. By the inclusion of Rear-Admiral Vaughan-Lee as Second Naval Member, and of Brig-General Brancker as the



The First Meeting of the New Air Board.—Rear-Admiral Tudor (on right), and Rear-Admiral Vaughan-Lee.

Second Military Member of the Board, added strength has been given to the body, and in the selection of both the permanent secretary, Sir Paul Hervey, and the under secretary, Commander Groves, the Board are to be congratulated. The latter's experience and sound knowledge of air work should prove a highly valuable asset in the deliberations of the Board. That there will be little time for leisure is evident from a mere summary of the more immediate considerations which they have set themselves to tackle, as set forth in Lord Curzon's statement in the House of Lords. The broad programme will embody dealing with the position with regard to men and machines at the front and in the various theatres of war; organisation of long-range offensive operations; defence of this country by aircraft and guns; use and development of lighter-than-air craft; supply of the best types of aeroplanes and engines to both Services; armament of aircraft; a national aircraft factory; new inventions; provision of flying grounds; training facilities, &c., with yet wider problems looming up behind. We offer our best wishes for the smooth working of the new body, and without looking for miracles in the form of sudden changes, we have confidence that a considerable step forward has been made towards that much-desired perfection which each individual member of the Board, as well as all having the present and future welfare of aviation at heart, are so much concerned to see brought about.

Without in any way attempting to pre-judge the report of the Air Inquiry Committee, we are not very surprised to see the manner in which many of the sweeping assertions



The First Meeting of the New Air Board at Carlton House Terrace.—Sir Paul Hervey, K.C.M.G., Permanent Secretary (on left), and Commander Groves, Under Secretary.



The First Meeting of the New Air Board at Carlton House Terrace.—General Sir David Henderson, Director-General of Aeronautics, 1st Military member.

which have had such a long innings all to themselves have largely melted into thin air when brought under the searching light of strict investigation and proof. It is the same old story again of spoiling a really good case by excess of zeal and ill-advised over-stating. Even allowing for all exaggerations and loose expressions, nevertheless we are glad to see that Mr. Pemberton Billing has, as was suggested he should in last week's "FLIGHT," wisely announced his decision to give evidence before the Committee. We can only express the further pious hope that upon this occasion he will put his case forward with courteous deliberation, even if he has to miss the making of dramatic situations. We feel confident that should he be able to justify upon real grounds one tithe of the charges he has launched against the mal-administration of the Services, he will not only have the sympathy of the public but also the sincerest thanks of every man sitting on the Committee. It will perhaps be difficult for outsiders to judge too critically, as it is evident much must be heard in camera under present conditions. On the whole, however, it may be accepted that this narrowing down of publicity will be as little resorted to as is possible, and whilst we may look forward to a fair weighing of the evidence and of a just report, whatever form this latter takes, the shaking up generally which the proceedings have brought about will have a salutary effect in any direction where previously there has been an inclination to slackness or inefficiency. For this result of past agitation there is much to be thankful for, including the new Air Board with its extended scope and powers.



The British Air Services

PER ARDUA AD ASTRA

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

The following appeared among the Admiralty announcements of the 23rd ult. :—

Temporary Lieutenant (R.N.V.R.) A. C. Wade to "Wildfire," additional. May 22nd.

The following have been entered as Probationary Flight Sub-Lieutenants (temporary), and appointed to "President," additional, for R.N.A.S., with seniority of May 28th: B. A. Millson, E. A. Power, E. S. Goodwin, A. W. I. Ashe, E. J. Crisp, D. F. FitzGibbon, J. D. Haig, E. A. Bennetts, C. W. Cory-Wright, and L. E. Lander.

The undermentioned have been entered as Temporary Sub-Lieutenants (R.N.V.R.), with seniority as follows: R. F. Osborne, May 21st; E. C. Blake, May 22nd, and appointed to "President," additional, for R.N.A.S.; T. R. Garrigan, May 22nd, and appointed to "President," additional, for R.N.A.S., May 29th.

Lieut.-Commander J. Anderson (retired), R.N.R., to "President," for R.N.A.S. May 25th.

The following appeared among the Admiralty announcements of the 24th ult. :—

Engineer Lieut.-Commander A. Leamon-Parry to "President," additional, for R.N.A.S. May 23rd.

L. C. Pincott entered as Probationary Flight Sub-Lieutenant (temporary), with seniority of May 28th, and appointed to "President," additional, for R.N.A.S.

E. Webb granted a temporary commission as Lieutenant (R.N.V.R.), with seniority of May 23rd, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 26th ult. :—

Probationary Flight Sub-Lieut. (temporary) A. P. Hadow, granted a temporary commission as Lieutenant (R.N.R.), seniority of May 25th (appointment as Probationary Flight Sub-Lieutenant terminated).

R. F. Bentley, entered as Sub-Lieutenant (R.N.V.R.), temporary, seniority of May 16th.

The following appeared among the Admiralty announcements of the 29th ult. :—

The undermentioned have been entered as Probationary Flight Sub-Lieutenants (temporary): H. J. Bath and F. H. Prime, seniority of May 1st, and appointed to "President," additional, for R.N.A.S., from same date; J. E. Potvin and G. R. Halliday, seniority of April 29th, and appointed to "President," additional, for R.N.A.S., May 7th.

Royal Flying Corps (Military Wing).

The following appeared in a supplement to the *London Gazette* issued on the 22nd ult. :—

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: F. H. Whiteman and I. L. Kight.

To be Second Lieutenants (on probation); May 13th, 1916: Stephen Dendrino, Herbert J. Gibson and George Kay.

The following appeared in the *London Gazette* of the 23rd ult. :—

Flight-Commanders.—Temporary Lieut. R. S. Maxwell, General List, from a Flying Officer, and to be Temporary Captain whilst so employed; May 11th, 1916.

Memorandum.—Pte. John Kirsop, from A.S.C., to be Temporary Second Lieutenant for duty with the R.F.C.; May 15th, 1916.

The following appeared in a supplement to the *London Gazette* issued on the 24th ult. :—

Supplementary to Regular Corps.—C. D. M. Campbell, from Temporary Captain, to be Captain; May 11th, 1916.

The following appeared in a supplement to the *London Gazette* issued on the 25th ult. :—

Assistant Equipment Officer.—Temporary Second Lieut. A. G. Powell, General List; May 13th, 1916.

School of Instruction for R.H. and R.F.A.—Capt. J. C. J. Smith, R.A., to be Captain-Instructor in Gunnery, and to be seconded; May 9th, 1916.

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: F. Alexander and A. Champion.

The following appeared in the *London Gazette* of the 26th ult. :—

Flight-Commanders, from Flying Officers, and to be Temporary Captains whilst so employed.—Second Lieut. (temporary Lieut.) W. H. D. Acland, R. 1st Devon Yeo. (T.F.); Feb. 15th, 1916.

Temporary Lieut. A. C. Hagon, General List; May 12th, 1916. Second Lieut. E. W. Leggatt, Wilts. R.; May 13th, 1916.

Assistant Equipment Officers.—Temporary Second Lieut. A. L. Wilson, General List; May 6th, 1916. May 18th, 1916: Second Lieut. G. Iredell, Special Reserve; Second Lieut. F. S. Smith, Special Reserve; Temporary Second Lieut. L. M. Page, General List.

Memoranda.—Temporary Lieut. H. J. L. Cappel, A.P. Dept., is transferred to the General List for service with the R.F.C.; May 5th, 1916.

To be Temporary Lieutenant: Lieut. G. Frecheville, from R.N.V.R., for duty under the Dept. of Mil. Aeronautics; May 3rd, 1916. Lce.-Corpl. John Palethorpe, from Worc. Yeo. (T.F.), to be Temporary Second Lieutenant for duty with the R.F.C.; May 27th, 1916.

Supplementary to Regular Corps.—Second Lieut. (on probation) F. S. Smith is confirmed in his rank.

To be Second Lieutenants (on probation): Henry H. Burt, April 25th, 1916; William M. Cumming, April 28th, 1916; Lionel B. Aylen, May 1st, 1916.

The following appeared in a supplement to the *London Gazette* issued on the 27th ult. :—

To be Temporary Second Lieutenants for duty with the R.F.C.: Sergt. Alfred W. Empson, from A.S.C., May 1st, 1916; Sergt. Cuthbert Robert Lamrock, from 6th Aust. Light Horse, May 13th, 1916.

The following appeared in a supplement to the *London Gazette* issued on the 29th ult. :—

Memoranda.—N.C.Os. and man to be Temporary Second Lieutenants, on probation, for duty with the R.F.C.:—April 30th, 1916: Corpl. Errington E. Castle, from R.F.C.; Lce.-Corpl. Walter H. Buckeridge, from A.S.C.; Lce.-Corpl. C. J. Beatty, from 2nd Canadian Divl. Supply Col.; Pte. R. F. Browne, from 2nd Canadian Divl. Headquarters Sub. Staff. May 7th, 1916: Staff-Sergt. Bernard F. Wood, from A.S.C.; Corpl. C. P. Creighton, from 2nd Canadian Divl. Sig. Co.; 2nd Class Air-Mechanic L. Taylor, from R.F.C.

Commands and Staff.

Temporary appointments made at the War Office.

Deputy Assistant Director.—Capt. F. C. Jenkins, R.F.C., Special Reserve, from a Squadron Commander, Military Wing, and to relinquish the rank of Temporary Major; May 27th, 1916.

Staff Captains.—Capt. L. V. S. Blacker, Corps of Guides, Ind. Army, from a Balloon Officer, vice Major B. Hopkinson, Unattached List (T.F.); March 27th, 1916. Capt. I. M. Bonham-Carter, North'd. Fus., from a Flight Commander, in succession to Temporary Capt. G. M. R. A. MacSwiney; April 22nd, 1916. Temporary Lieut. H. A. P. Disney, Camb. R. (T.F.), from an Assistant Equipment Officer, and to be Temporary Captain whilst so employed, vice Major C. Mellor, R.E.; May 1st, 1916. Temporary Hon. Capt. J. S. Nicholson, and to be Temporary Captain whilst so employed; May 8th, 1916. Temporary Capt. L. Sadler, A.S.C., from an Assistant Equipment Officer; May 8th, 1916. Temporary Capt. the Hon. E. E. Charteris; May 8th, 1916.

Staff-Lieutenants.—Lieut. W. W. W. Reilly, Conn. Rang., and to be seconded, vice Lieut. G. W. Wentworth, Norf. R.; April 19th, 1916. May 8th, 1916: Second Lieut. F. L. Mond, R.F.A. (T.F.), from a Flying Officer; Second Lieut. J. N. Mearns, R.F.C., Special Reserve, from an Assistant Equipment Officer; Temporary Capt. R. A. Coote; Temporary Second Lieut. H. W. Phear, R.A.; Second Lieut. M. O. Darby, R.F.C., Special Reserve, from an Assistant Equipment Officer; Temporary Second Lieut. H. M. Bentley, from an Assistant Equipment Officer; Lieut. (D. O.) C. Mason, R.A.; Capt. C. F. Krabbe, T.F. Res.

Establishments.

Squadron-Commander.—Capt. T. F. Rutledge, Special Reserve, from a Flight-Commander, and to be Temporary Major whilst so employed; May 15th, 1916.

Flight-Commanders.—Maj. C. Mellor, R.E.; May 1st, 1916, but with seniority from May 25th, 1915.

Flying Officers.—Second Lieut. (on probation) Hon. B. H. E. Howard, Manch. R., Special Reserve, and to be seconded; Nov. 11th, 1915. Second Lieut. G. S. Hall, Special Reserve; May 4th, 1916. Lieut. D. M. V. Veitch, 1st D. of York's Own

Lts., Ind. Army; May 9th, 1916. May 10th, 1916: Temporary Lieut. R. D. Walker, Dorset. R., and to be transferred to the General List; Second Lieut. S. E. Faber, Special Reserve; Lieut. R. H. C. Usher, Wilts. R., Special Reserve, and to be seconded; May 11th, 1916. Lieut. C. J. W. Darwin, C. Gds.; Temporary Lieut. B. D. Collier, Norf. R., and to be transferred to the General List; Second Lieut. A. P. V. Daly, Conn. Rang., Special Reserve, and to be seconded; Second Lieut. (on probation) A. H. Francis, R. Suss. R., Special Reserve, and to be seconded; Second Lieut. (on probation) C. F. Denning, R. W. Surr. R., Special Reserve, and to be seconded. Second Lieuts. Special Reserve: W. G. Stewart, T. L. Brennan, P. R. Meredith, I. Curlewis.

Flying Officer (Observer).—Temporary Capt. Lord G. H. L. Dundas, General List; May 8th, 1916.

THE IMPERIAL

LORD MONTAGU has now published the scheme for an Imperial Air Service which he submitted to the Government. The following are the details:—

Board of Aviation.

1. President of the Board of Aviation (in the Cabinet).	3. Chief of Naval Aviation.
2. Vice-President (or Parliamentary Secretary).	4. Chief of Military Aviation.
	5. Chief of Anti-Aircraft Corps.
	6. Director of Research.

(The above form the Board.)

Other Heads of Departments—Financial Adviser, Director of Construction, Director of Supply and Contracts.

This Board in practice would follow the lines of other so-called Government "Boards," the President being supreme. But in this case the Board should meet frequently for consultative purposes, each member being responsible for his own department. The heads of the departments, not on the Board, would be asked to attend and advise the Board when their departments were affected. The President should have the usual ministerial powers, and he or the Vice-President should represent the Board in Parliament.

In order to promote harmony between the two services it is suggested that selections for the administrative staff appointments in the new Imperial Air Service should be made as far as possible from representative officers in the present two services. It is further suggested that to save overlapping and duplication, and to economise as compared with the present system, the following departments, most of which exist in duplicate already in the divided Services, should be amalgamated:—

1. Design.	6. Scientific research.
2. Construction.	7. Enlistment, training, and allocation of personnel.
3. Inspection.	8. Provision of lands and buildings for training.
4. Supply.	
5. Contracts.	

Objects of the Board of Aviation.

The Board should have for its primary object the handing over of trained men and completed machines for the use of the Army and Navy.

The Chiefs of the Naval and Military Aviation should be responsible for keeping the Board in touch with the plans of the Naval War Staff and of the General Staff. They should specially be responsible for training and provisions for training, including lands and buildings, and also for discipline and equipment, until the personnel and machines are handed over to the Admiralty or War Office for use in the field.

Importance of a Scientific Branch.

I attach great importance to the scientific side of the Board, and would have a special department for meteorology, map-making, analysis, testing of materials and metals, and the proper conduct of experiments, and I suggest the use of the present aircraft factory at Farnborough, mainly as an experimental testing factory, where fair

Roll of Honour.

THE SECRETARY OF THE ADMIRALTY announces the following casualties:—

Under date May 21st: Accidentally Injured.

Flight-Lieutenant John Forgan-Potts, R.N.

The following casualties have been officially announced by the War Office:—

Died of Wounds.

Captain G. B. Lucas, Indian Cavalry, attached R.F.C.
Second Lieutenant E. F. Sheffield, R.F.C.

Memoranda.—Acting Sergt.-Major William B. Power, from R.F.C., to be Second Lieutenant for duty with R.F.C.; May 30th, 1916.

Supplementary to Regular Corps.—Second Lieutenants (on probation) are confirmed in their rank: P. R. Meredith, W. G. Stewart, T. L. Brennan, G. S. Hall, I. Curlewis, S. E. Faber.

To be Second Lieutenants (on probation): Humphrey B. FitzHerbert; May 1st, 1916. Alexander N. David; May 27th, 1916.

Aeronautical Inspection Department.

THE following appeared in the *London Gazette* of the 19th ult.:—

Assistant Inspector (temporary).—Lieut. George K. Field, from R.N.V.R., and to be Temporary Captain; May 11th, 1916.



AIR SERVICE.

play might be given to inventors. The head of this department might, I suggest, be called the Director of Research, and he should be a young civilian with scientific training, but not necessarily an already distinguished scientific man.

It is also important that there should be very careful and rigid inspection of design and construction. Something in the nature of the present aeronautical inspection department should be set up. During the war the Board of Aviation must have certain factories and their outputs allotted to them, in addition to skilled men and necessary materials.

Financial Control.

The department should have freedom from Treasury control in the matter of details, it being understood that the Treasury sanction shall be obtained for money in round figures, the President and his financial adviser being responsible for the proper expenditure of the money. Proper estimates to be submitted every year, and the financial adviser to be in close touch with the Treasury.

Accommodation.

It is important from the outset that all personnel should be housed in one building, and I estimate that about 200 rooms would be wanted to start with. This would mean the taking of two floors in such an hotel as the Hotel Victoria in Northumberland Avenue, which is close to the War Office and Admiralty, or the whole of the new building near the Haymarket Theatre, which is said to have about this number of rooms. It should be remembered in connection with this that both the Naval and Military Air Services are now housed in various buildings outside their own offices.

Designation.

It will be noticed that I suggest that the titles of R.N.A.S. and R.F.C. should be dropped and merged into one common title, "The Imperial Air Service." I think the use of the word "Imperial" is very important in view of the fact that not only have the great Dominions taken a large interest in the subject, but during the war they have provided the forces with a considerable number of planes, India being specially noticeable in this respect, having provided from the Punjab alone a gift of £92,000, the price of 60 aeroplanes.

Executive.

I propose that there should be no interference whatever with the present Executive in the field, Sir John Jellicoe and Sir Douglas Haig retaining their complete control over all their aircraft.

This draft scheme is put forward as a possible framework on which to build, and not as a plan which cannot be altered. I desire, however, to urge careful consideration of its outlines, and the adoption of some combined Administration for both Air Services without delay. The position to-day in both Services is unsatisfactory, and the country is suffering. I sincerely believe that increased efficiency, and in the end less cost both of men and money, will result if an Imperial Air Service is constituted under a combined administration.

April 4th, 1916.

MONTAGU OF BEAULIEU.



Previously reported Missing, now reported Killed.

Captain C. H. Marks, Royal Flying Corps.
1941 1st Class Air-Mechanic A. Walker, Royal Flying Corps.

Wounded.

Captain W. Milne, Royal Flying Corps.
Second Lieutenant D. A. L. Davidson, Royal Flying Corps.
Second Lieutenant A. H. Francis, R. Sussex Regt. and R.F.C.
Second Lieutenant F. C. A. Wright, Royal Flying Corps.

Missing.

Captain C. E. H. James, Welsh Regt. and R.F.C.
Lieutenant H. L. C. Aked, W. Yorks Regt., attached R.F.C.
Second Lieutenant M. D. Basden, London Regt. and R.F.C.
Second Lieutenant M. M. Mowat, Royal Flying Corps.

The Royal Aero Club of the United Kingdom

SPECIAL COMMITTEE MEETING.

A SPECIAL MEETING of The Committee was held on Wednesday, the 24th ult., when there were present: Prof. A. K. Huntington, in the Chair; Lieut.-Col. R. K. Bagnall-Wild, R.E.; Mr. Griffith Brewer, Mr. Ernest C. Bucknall; Col. Sir Capel Holdern, K.C.B., F.R.S.; Lieut.-Col. Mervyn O'Gorman, C.B.; Flight-Commander C. F. Pollock, R.N.; and the Assistant Secretary.

Election of Members.—The following New Members were elected:—

Charles Bright, F.R.S.E., M.Inst.C.E.

Robert Paul Grimmer.

Frank Mead.

Lieut. Murdoch Sutherland Stewart, R.F.C.

Sub-Lieut. Charles Broughton Clay Swayne, R.N.

Flight-Commander John Phillip Wilson, R.N.

THE FLYING SERVICES FUND administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of

FROM THE BRITISH

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Straights with instructor last week: Messrs. Ballard, Bathurst, Cockelle, Cooper, Donald, Edwards, Forster, Goodhart, Hodgkinson, Kaye, Phillips, Rodocanachi, Ward and Welinkar. Landing practice: Messrs. Smith and Sloden. Eights with instructor: Messrs. De Beer and Spenser. Brevet tests: Messrs. Burrell, Eichelbrenner and Matthews.

Instructors: Messrs. Biard, Hale, Pashley, Russell and Winter.

Machines in use: Grahame-White biplanes.

Beatty School.—The following pupils were out during last week: Messrs. Jaquin, le Champion, Cuthbert, Gliksten, Atkin, Drewery, Barrow, Martin, Murdoch, Roberts, Stanley, Dowding, Gaskin, Knox, Hick, Garlick, McPherson, New, Venables, Towson, Elliott, Edwards, Brewerton, Earl, Skeet, Davy, Kay, Jones and Hoskins.

The instructors were Messrs. G. W. Beatty, G. Virgilio, A. E. Mitchell, and H. Fawcett; the machines in use being Beatty-Wright dual-control and single-seater propeller biplanes and Caudron dual-control and single-seater tractor biplanes.

Mr. R. L. D. Cuthbert took his certificate on a Beatty-Wright machine.

Hall School.—The following pupils were out last week receiving instruction: With P. G. Allen: Skinner, Russell, Jones, Illingworth, Cordner, Hucklesby and Davis. With Charles Bell: Armitage, Collier, Gudger, Skinner, Dixon and Deane. With Cecil M. Hill: Pennell, Le Grice, Taylor, Rochford, Warwick, Rand, Gaskell, Jones and Guy.

Certificate taken by Pennell on 70 h.p. Isaacson Caudron.

Machines in use: Hall and Caudron tractor (Government type) biplanes.

London and Provincial Aviation Co.—Pupils doing rolling last week: Capt. A. Nathan, Lieut. G. Deacon, Messrs. Sivewright, Brake, Daly, Birkbeck, Jones and Everden. Straights: Messrs. Moore, Pulford, Dawson and Capt. Henderson. Circuits and eights:

the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

	£	s.	d.
Total subscriptions received to May 23rd, 1916	10,681	5	8
Collected at the Westland Aircraft Works,			
Yeovil (Thirty-third contribution) ...	0	12	0
Collected at the Royal Naval Air Station,			
Whitley Bay ...	3	10	0
Mrs. C. de Beauvoir Stocks (Fourth contribution)	1	1	0

Total, May 30th, 1916 10,686 9 5

B. STEVENSON, Assistant Secretary.
166, Piccadilly, W.

FLYING GROUNDS.

Capt. Henderson and Messrs. Egelstaff and Morley Kent.

Instructors: Messrs. W. T. Warren, M. G. Smiles, F. G. Parsons and W. T. Warren, jun.

Royal Aero Club Certificates were taken by Messrs. Egelstaff and Morley Kent, and also by Capt. C. Henderson.

Ruffy-Baumann School.—Pupils with instructor last week: Messrs. Car, Fraser, Edgar, Dobson, Wilson, Straus, Portella, Maya, Torres, Fanshawe, Bailey, Di Balme, Williams, Johnstone and Westlake. Pupils doing straights: Messrs. Whitaker, Strauss, Bailey, Williams, Winter, Fraser and Johnstone. Eights or circuits alone: Messrs. Johnstone, Strauss and Baron D'Opstaal.

Instructors: Messrs. Ed. Baumann, Felix Ruffy, Ami Baumann, André Thomsen and Clarence Winchester.

Machines in use: 50 and 60 h.p. Ruffy-Baumann tractor biplanes.

Several pupils are now ready for their certificates, and as vacancies are therefore occurring shortly the manager invites applications from prospective students.

Bournemouth School.

PUPILS rolling alone last week: Messrs. Kennedy, Pritt, Scaramanga, Green, Daniel, Brandon, Turner, Hammersley, Hinchliff, Little and Eyston. Straights alone: Messrs. O. Wilson, J. Wilson, Smith, Gordine, Adamson, Barlow and Morris. Figures of eight or circuits alone: Messrs. C. Morley, Gordine, Morris and J. Wilson.

Instructors: Messrs. S. Summerfield and Brynildsen. 35-45 and 60 h.p. Caudron tractor biplanes in use.

Certificate taken by Mr. C. Morley, who attained a height of 2,000 ft., and came down encircling the aerodrome on his *vol plané* with engine off. He showed great mastery of the controls.

Exhibitions were again carried out on Wednesday and Saturday afternoons by Mr. S. Summerfield on the 60 h.p. Caudron. His usual stunts were again in evidence.

ARMCHAIR REFLECTIONS

I AM distressed when I read of so many pilots losing their lives or becoming seriously injured here in England, either at one or other of the flying schools, or in cross-country practice. And I cannot help feeling that there is a reason for it other than what one might perhaps look upon as a natural risk or hazard inseparable from the act of flying.

Accidents happen from such a variety of causes, some within the power of the pilot to avert, and some without, that it is impossible to deal with all that have happened, or to think about those that might happen. Leaving out severe and unexpected weather conditions, one might, for the purposes of this reflection, whittle them down to two —those which happen through a fault in the machine itself, and those which happen through faulty piloting.

So far as the actual breaking of the machine in the air is concerned, construction has made such gigantic strides towards safety, and the positions of strains and stresses with the necessary strength of construction to take them is so well understood and provided for since the early days, that for such a thing to happen is most unusual.

Such things will happen occasionally, of course. An aeroplane after all is somewhat frail, and may receive a sudden strain whilst in the air that leaves no indication of what has happened, and an additional strain in the same place may cause disaster on a future occasion. Still, such happenings are so few, that whilst acknowledging their possibility, they may well be left out as negligible, especially as almost every accident is, rightly or wrongly, put down to side-slip.

Now, I am not a pilot, and therefore, perhaps, liable to lay myself open to the accusation of talking at random. Nevertheless, I know something of aeroplanes and their ways, and I have seen just a bit of flying during the last few years. Moreover, I do not submit this as a leaf out of a text book on flying, but as my own opinion, and for what it is worth.

To say that a given accident was caused through side-slip, I accept as an embracing term, but really it is only the middle one of three things. Nose-dive is the third, and faulty handling the first. I do not believe a machine can side-slip unless it is placed in certain positions under certain conditions. Then it cannot do otherwise.

Again, I cannot help noticing that in all these side-slipping accidents, the pilot is what I will designate, without any reflections on his ability, a young pilot. That is, a pilot without very many months of piloting behind him. I say this with all respect, and without questioning his skill, but I cannot help knowing that old pilots, men who have flown for upwards of six years or so, do not have side-slips. It is true that these men also at one time were young pilots, but even then, with very few exceptions, they were immune, and I take it that the reason is to be found in the method of production; the younger pilots have not had the benefit of having been brought up in the industry, or art, therefore missing the valuable teachings of early days.

These later pilots have come and found the aeroplane ready made; an accomplished fact. It is to them a machine constructed to fly, and when they have passed their period of tuition and learned to fly, they fly, but I feel they fly without that FEELING, that—how shall I describe it?—that INSTINCTIVE SENSING that a machine is GETTING into a bad position, in time to right matters. They only know when it has GOT THERE, and then it is sometimes too late.

I cannot accuse men of deliberately playing touch-and-go with their lives, yet I feel so strongly on this matter of side-slipping that I can put it down to no other reason than faulty flying—faulty with the pilot unconscious of the fact, if you please, but faulty just the same.

With the exception of a few reasons outside the scope of this discussion, a machine will only side-slip because it has never gained flying speed, or because it has lost it, the latter embracing, of course, side-slipping through over-banked turns, which after all is loss of flying speed looked at from another standpoint, namely, the speed is insufficient to hold the bank, or the bank is too great for the speed, whichever you like.

Another condition tending towards trouble, which the younger pilot has to reckon with, as apart from the older pilots, embracing as it does his lack of experience, is the rapid changing about from machine to machine.

In the old days, a pilot flew for months on end on one make of machine only. He knew his machine, its speed, what it would do and what it would not do, and he was conscious instinctively that all was not going well, long before he could decide what was the matter.

The younger pilot flies perhaps three or four different machines in a single day, twisting them the other way about in rotation on the morrow. They may vary in the necessary flying speed from seventy to ninety-five miles an hour, and he is liable to forget during the act of flying which machine he is on. Suppose he has just come off the slower machine, and on the faster one his Pitot shows 70 m.p.h. It seems quite within the bounds of possibility to me that he might for the moment forget, or even never think of the machine he is on, and take a steep banked turn at something much under the proper speed of that particular machine.

It is not a bit of use my writing all this unless I can either suggest a remedy, or set others to do so, and I would not have written it at all, entering as I am into realms which do not concern me in this page of "Reflections" except for that reason, but it does grieve me so when these splendid young pilots come to mishaps. I feel sure, in my own mind, that if they would only take a little care, and keep a watchful eye on the Pitot tube, leaving all stunts alone, or only just touching the fringe of them till they get that FEELING which I spoke of just now, all would be well.

There is all too great an inclination with young pilots to look upon an aeroplane much in the same light as they look upon a motor car. They were not of the flying world when what a machine would do and what it would

not do were matters for investigation. In plain words, the aeroplane, to them, is just a vehicle, and they are men taught to drive it.

It is quite understandable. I myself have walked miles in the early days, simply to see a machine leave the ground in a short hop. Now flying is become such a commonplace affair that even children living near an aerodrome don't take the trouble to look up when a machine passes overhead.

I will not say the younger pilots do not take things seriously enough, that is not really the case, but I do think they are apt to look upon flying in the light manner I have suggested, which is quite a natural thing under the circumstances of their training, and the time at which they entered the art.

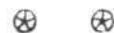
Anyway, I make bold to say that in my opinion, and it is ONLY my opinion, side-slip ought to be one of the most rare things to happen, instead of, as at present, one

of the most frequent. I am convinced in my own mind that side-slipping CAN be avoided, and that it happens in ninety-nine cases out of the hundred through faulty handling by the pilot.

There are hundreds of men in aviation who are in a position to know more of this matter than I am, and I am quite ready to listen to their opinions, and get them publication of their communications in our correspondence columns. It is mainly with the idea of obtaining the opinions of advanced pilots that I have entered into the matter here.

In most things, as also in flying, we have an idea that because WE know all about it, everybody else does the same, which is not always the case, and a few words from an experienced man may be the means of saving many valuable lives.

So now, come along, and let us thrash the matter out.



FLYING AT HENDON.

FINE weather enabled a good afternoon's work to be got through last Saturday. As usual, passenger flying was the order of the day, and ladies were much in evidence. Most of the passengers were taken up on the new 80 h.p. (Gnome) G.-W. three-seater biplane by Claude Grahame-White, H. C. Biard, B. F. Hale, M. Osipenko, and C. Pashley. Osipenko and J. S. B. Winter also put up some good stunt flying on the 60 h.p. G.-W. school 'buses. H. Sykes, until recently instructor at the L. and P. School, made several fine flights, with and without passengers, on a Martinsyde two-seater tractor biplane, which he has just overhauled and put into flying trim. It has been fitted with an 80 h.p. Anzani, and, so engined, puts up a most creditable performance in spite of the fact that it was originally designed for a 100 h.p. Gnome. There is, however, still plenty of power, and the maximum speed is well in the neighbourhood of 70 m.p.h., whilst the landing speed is comfortably low. Sykes first had this machine out some three Sundays

AWARDS WON

IN the *London Gazette* of the 30th ult. it was announced that His Majesty the King has been graciously pleased to confer the Military Cross on the undermentioned officers, in recognition of their gallantry and devotion to duty in the field:—

Captain J. B. T. LEIGHTON, S. Gds.
(attached No. 14 Squadron, R.F.C.).

He took photographs at a height of 200 ft. while his observer engaged the enemy with rifle fire. On other occasions he has done fine and gallant work.

Temporary Lieutenant F. BELLAMY, General List
(attached No. 17 Squadron, R.F.C.).

When unable to reconnoitre owing to clouds, he descended to 200 ft. under heavy fire. Though his instruments were broken and his petrol tank pierced, he eventually returned safely. On another occasion, when forced to descend, he repaired his engine under sniping fire, carried out his bombing, and again returned safely.

Temporary Lieutenant J. G. HOWELL, R.F.A.
(attached No. 16 Squadron, 2nd Wing, R.F.C.).

When the pilot of his machine was killed he climbed into the pilot's seat, and, standing in front of him, managed to land the machine within our lines.

Lieutenant F. F. MINCHIN, Princess Patricia's Canadian L.I.
(attached R.F.C.).

For conspicuous gallantry and skill on many occasions, notably when leading a successful bomb and machine-gun raid on a force of the enemy which he had located overnight. Next day he took part in two other raids. During these operations he flew for thirteen hours over enemy country.

Lieutenant (Temporary Captain) A. A. B. THOMSON,
R. War. Regt. and R.F.C.

For conspicuous gallantry and good work during Zeppelin raids.

Second Lieutenant S. E. COWAN, R.F.C. (Special Reserve).

He dived on to an enemy machine in the enemy's lines and drove it to the ground, where it was smashed, and then circled

ago, when there was a wind of about 35 m.p.h. blowing. It must be admitted that he caused no little alarm to those on the ground at the time, especially when he unexpectedly banked the machine; but, as his landing shortly after showed, he had the 'bus well in hand, so that there was really no need to worry. He told me on Saturday that he is now getting to know his new mount thoroughly, and hopes, therefore, to put in some good work on it. Other machines up during the afternoon were several Curtiss tractors, Maurice Farmans, a de Havilland Scout, and a B.E. 2c, while a Sopwith Bullet and the Handley-Page "Baby" battleplane paid a visit to the aerodrome. Lieutenant "Lizzie" Graham also paid us a visit, looking very fit in spite of the nasty strafing he received recently.

On Sunday it was a trifle windy, but a fair amount of flying was put up, and many passengers taken for joy rides on the G.-W. 'buses by the G.-W. pilots.



BY THE R.F.C.

round and fired at the pilot and observer as they ran for shelter. Although forced to land through his engine stopping he contrived to restart it, and got back under heavy fire.

Second Lieutenant F. D. STUART-GRAY Lord DOUNE,
Scottish Horse (T.F.) and R.F.C.
Temporary Second Lieutenant R. V. WALKER,
6th Bn. Conn. Rang. and R.F.C.

When on patrol duty with Second Lieutenant Walker he sighted a Fokker machine 1,000 ft. below them. Second Lieutenant Lord Doune at once dived, and, when within 60 yards, Second Lieutenant Walker opened fire. Lord Doune then headed straight for the Fokker, which had to rise steeply to avoid a collision. Second Lieutenants Walker and Lord Doune then both opened fire and shot away one wing of the Fokker, which fell behind our lines.

Second Lieutenant V. A. STOOKE, 2nd Dns. (Special Reserve),
attached No. 14 Squadron, R.F.C.

He engaged the enemy with rifle fire and shot two while his pilot was photographing at 200 feet altitude. On other occasions he has done fine work.

Second Lieutenant D. M. TIDMARSH, 4th Bn. R.I.R.
(Special Reserve), and R.F.C.

For conspicuous gallantry and skill when attacking hostile aircraft on several occasions, notably on one occasion when he dived at an enemy machine and drove it down wrecked to the ground.

His Majesty the King has been graciously pleased to approve of the award of the Distinguished Conduct Medal on the undermentioned for devotion to duty in the field:—

211 Flight Sergeant (Acting S./M.) C. A. C. FIDLER,
"X" Aircraft Park, R.F.C.
212 Flight Sergeant (Acting S./M.) R. J. SLADDEN, No. 17
Squadron, R.F.C.

22 Flight Sergeant (Acting S./M.) W. G. STAFFORD,
No. 14 Squadron, R.F.C.

For consistent good work in connection with the care and repair of aeroplanes.

AVIATION IN THE

IN the House of Lords, on May 23rd, Lord Montagu of Beaulieu moved:—"That this House considers that the development of aviation for purposes of war can no longer be efficiently carried on under the present system of the divided control and responsibility of two separate departments; and that the time has now arrived when the supply of men and materials should be concentrated under single control, at the same time leaving the executive power over Naval and Military aircraft with the Army and Navy as at present."

Lord Montagu said that he rose with a sense of unusual responsibility. There was a breakdown to a certain extent in the discussion of this matter in the House of Commons the previous week, and since the late Order in Council it has become difficult to discuss this very important subject outside these walls. He thought the Government realised that if they put the screw down too hard they would only give rise to a sense of public dissatisfaction. It was on the floor of that House that this subject as part and parcel of the general policy of the Government must be discussed.

When he spoke a little more than two months ago he made certain statements which were to be the subject of inquiry by a judicial committee. He was going to that committee most willingly and as a matter of courtesy. He held very strongly, however, that any criticisms which were made in the House of Lords on the Government on this or any other matter should be answered across the floor. If a member of Parliament who made criticisms of a Government Department were always to be liable to have to explain these statements before a committee, there would be no freedom of debate. This judicial committee consisted mainly of gentlemen who did not pretend to be experts. He had every confidence in their impartiality, and he was prepared to submit everything he had said to their examination. There was very little in his past utterances on this question which had not come true.

He understood the Government were in a difficulty. One could not expect the noble lord who so often answered for the Government to understand the intricacies of aviation. But in an important debate like this, the noble field-marshal and the noble duke who represented the Admiralty ought to take up the cudgels to some extent. He rejoiced to know that in future they would have Lord Curzon, who had taken immense interest in the question, and would shortly become an expert on it, to reply to criticisms. Other conceivable ways of getting over the difficulty of replying on technical points would be to make the Director of the Naval Air Service a peer. Sir David Henderson might contest a seat for the East of Kent, or at Lowestoft or Newcastle. If Lord Roberts had had on occasions in the past to submit his case to a committee appointed by the Army Council to investigate his statements, Lord Montagu thought he would very often have been condemned; but as we now know, he would have proved perfectly right. Notwithstanding, he intended to treat the committee with every respect and give them every kind of information. He would be surprised if the verdict of the committee was not favourable as far as his share in this matter is concerned.

As to the Air Board that had been just appointed, he thought the step justified the part which he and others took in urging this matter upon the House and the country. He was delighted that Lord Curzon and Lord Sydenham were going to be members of this Board. As regards the noble earl, he had seen his work in India, and he had great confidence in him, and it was clearly his duty to support Lord Curzon in every way, and if he had any knowledge of a special kind to place it unreservedly in his hands. Lord Sydenham also had great experience. He knew it had been said that Lord Curzon was autocratic in nature, and he was delighted that he was, for his tendency to exercise autocracy might be of great benefit in the work which he had to do.

As far as he could make out, the Air Board is the Montagu Committee, if he might use the term, with some added advantages. It had a Cabinet Minister in the chair, which was a great advantage, and, secondly, it could lay down an air policy, and it seemed to him a melancholy thing that only now in the twenty-second month of the war we should be beginning to lay down an air policy. That fact alone would justify anything he might have said or done with a view of getting a better administration of the Air Service. But supposing Lord Curzon disagreed with the Air Board on a question of policy. He would make representations to the Admiralty or the War Office, and these two departments would be advised by the very people who had disagreed with him. He would then appeal to the War Committee, on which he would meet Mr. Balfour and Lord Kitchener, who were naturally also advised by the same technical experts with whom he had already disagreed; and they would sit upon him also. As the next step he would take his case to the Cabinet, and then, perhaps, he would meet still greater difficulties and have to face the criticism of the heads of the great departments who had blocked his way upwards. That

HOUSE OF LORDS.

is not a workable system. He wanted to see the noble earl master in his own house. If this Air Board was to do any good at all it seemed to him that the head of it should be not only the head of a great supplying department, but that he should have power to order supplies and base them on the needs of his policy. He wished to say that as the result of pressure some good had already been done, and he hoped what was now to be done would be productive of further good. He did not wish to rake up the embers of the past, as that would be bad policy. He wanted to judge these matters by one test—how far do they help us to win the war?

In regard to what had to be done in the future he was aware that they would have to justify fully their demand for a unified system of administration and for an Imperial Air Service. There might be difficulties in carrying out changes in time of war, but in this matter he thought the Government might take their courage in both hands. Even if a mistake were made in giving the Air Board more power than it possessed to-day, he did not believe that that would be running half as great a risk as they would be running by going with timid and faltering steps along the path which eventually they would be bound to follow.

Already a step had been taken which had his approval and which Lord Derby also strongly advocated. The Royal Flying Corps had taken over de Keyser's Hotel, and he hoped that that showed that Sir D. Henderson and his colleagues had in view getting the Air Service more and more free from the trammels of the past. He would like to see a Fifth Lord of the Admiralty—an Air Lord, to represent the views of those interested in naval aviation. Eventually a fully-fledged Air Ministry must come out of this; sooner or later the Imperial aspect of the Air Service would arise. I know that already Australia has taken the matter up, and that a great many of the leading men of Canada are seriously considering the idea. Thus the Air Service would not be for this country alone. It must be an Imperial Air Service. All over the world the question of the supremacy of the air was being anxiously debated. In the United States there was an Air Bill before the Congress now. Individual states were organising air services. He said deliberately that the first nation which achieved anything like supremacy in the air would have an immense advantage in war over any other. He would not reveal what we had done at the front; but he said without fear of contradiction that we had not got supremacy at the front. He did not agree with the declaration made by Mr. Bonar Law in the House of Commons the other day that we had supremacy at the front and maintained it ever since. He preferred the fairer declaration of Mr. Tennant, who said on March 28th that at the moment the majority of the German aeroplanes were probably faster than ours, but that this state of affairs was being gradually altered. Lord Montagu thought Mr. Bonar Law went far beyond what he was justified in saying.

He looked forward to the day when the frontiers of India would be patrolled by aeroplanes, when aeroplanes would go up to discover where the peril existed, and whether the enemy was advancing from beyond the hills; when they would be used all over Australia for police purposes; when they would guard the gateways of our Empire at Singapore, Malta, and Gibraltar, and when they would fly over the prairies of Canada as frontier police. He thought we should also come to the time when aeroplanes would be used for commercial purposes, and especially when the carriage of mails and passengers by aeroplanes would become one of the common things of the day.

If there was a division on his motion, he would be proud even if he was in a minority of one, and he thought the names of those members who supported him would be a roll of honour in future years. He knew it was difficult to get a Government department to look far ahead. For a Government department "now" is never the appointed day. If one looked back upon any of the great movements of the past it would be found that the official world is always the last to accept the facts of the day. We might have had all the rights of inventions in this country for a paltry sum of money if there was any foresight in a Government department. The same kind of official complaisance existed to-day. In a time of war this state of mind was more serious than it would be in time of peace. There was a great risk in delay. We were only on the threshold of great developments in aerial warfare. No one could tell how far it was going, or what influence it might have on the course of the war. You could not afford to wait much longer. The war was fast becoming one of exhaustion and stagnation. Each side was losing vast numbers of men. Aerial warfare could be waged with a less expenditure of men and better results. For 5,000 aeroplanes, with two men in each, you would want only 10,000 men. With aeroplanes you could do more damage to the enemy with a smaller number of men than you could do in any way on land.

He confessed that at times he felt like one standing at the curtained window of a room in which a sleeper lies in bed. He tried to draw the curtain back, and the sleeper turns lazily over and says, "Don't draw the curtains yet; it will keep me from sleeping." That is the attitude of people in official circles. They said, "What a horrid thing war in the air will be. Why cannot war go on in the nice old-fashioned gentlemanly and courteous way?" But the enemy would not wait and accommodate themselves to those ideas.

The Empire was practically defenceless from above. We must at once face this peril in the air, or we shall be left behind to our utter ruin. The longer the war goes on the clearer it becomes that we must pay more attention to aerial warfare. Whether we look to the daily increasing accounts of combats in the air or to the enormous strides that are being made in the development of the aeroplane, we must see that this tendency is inevitable. We cannot successfully cope with that state of things so long as we have disorganisation and want of concentration and jealousy and friction between the two great arms of the Service. He said once more that you could not win in the air with divided forces. He believed that every nation would before long be forced to create an Air Ministry by that sheer necessity which knows no law, which regards no precedent, and which fears no Government. The immense development of aircraft in all directions alone would compel the creation of an Air Department. They needed at home just as much as at the front more concentration, more courage, more force. If we did not organise properly before the end of the war, we would live in constant dread of air raids taking place, which meant death and destruction. Was that a prospect to be faced with equanimity? He was confident that, if we realised this peril now, the Air Minister of the future would have an easier task than the noble lord has now. He would be able, he hoped, to echo that phrase of the psalm, "Thou shalt not be afraid for the terror by night, nor for the arrow that flieth by day." He would be able to assure his country that they need not be afraid of dirigible or aeroplane, and he hoped he would be able to show that our guardian angels, our own aircraft, would be ready to defend our homes and keep our country inviolate.

Viscount Milner said he approached this subject with all the intense interest which its immense public importance imposed on all of them, but without any claim to be more than a layman on the subject. A number of their lordships who were anxious to speak possessed greater expert knowledge than he did, and he could not imagine why none of them was willing to undertake to second the motion. He did so gladly for two reasons, which he could explain in a very few sentences. The first was the deep impression he had of the importance and extreme urgency of the question, and the second was his conviction that the present opportunity was one which should not be lost for eliciting from the Government an authoritative statement of what their policy was and what the Board of which the noble lord opposite was chairman was exactly intended to do. That was the practical point of importance at the moment, and it was in order to give him the opportunity of enlightening them on this point that the motion was brought forward. He hoped that comparatively little time would be spent in deplored the laches and mistakes of the past, and that some progress will be made in seeing our way in the future.

The Earl of Derby said he was afraid he came under the category to which the noble lord said he did not wish to belong—a jack-of-all-trades—but having been connected with a previous committee he hoped he might be allowed to say a few words. There might be one or two points on which they slightly differed, but the general principle of the resolution seemed to him one which the Government had already accepted, and accepted, as he believed, for the benefit of the country.

When he had the honour of being the Financial Secretary at the War Office under Lord Midleton, there was at the time at the War Office a general officer whom personally he had always looked upon as one of the most brilliant officers that had ever been in His Majesty's Army—Sir Henry Brackenbury. There was a discussion one day on the provision of sheds at Aldershot for dirigible balloons. He (Lord Derby) had taken the line that this was an unnecessary expense, and Sir Henry Brackenbury came to his room, and he would never forget the words he used:—"I wish you would help me to get this through. I shall not live to see it. You may; but I believe that England is more in danger from the air than she has ever been since the Spanish Armada." That seemed to him to show the most extraordinary foresight. He was sorry to say that, although he thought he did support Sir Henry Brackenbury, after that he was rather in the position of the sleeper to whom Lord Montagu had alluded. He turned over and went to sleep again, and did not take the active interest in the Air Service which the noble lord himself had done.

Although there had been spasmodic interest nobody looking back could say that there was anybody in the War Office or the Admiralty

who really took a big view of what was necessary for the aircraft or put it forward as essential for our welfare, and really it was left actually to a particular portion of the public Press to bring the whole question of aeronautics most prominently before the public. In his opinion if it had not been for that spirit of emulation which was secured by large prizes, and which gave the opportunity to firms not to cater for Army or Navy, but to cater for what he would call commercial and sporting purposes, he was perfectly certain we should not have been in the same position—even though it might not be as good as we wished at the present moment—for securing the aircraft we had as a matter of fact got.

As to the future, he, in the main, entirely agreed with Lord Montagu, speaking as to the general principle on which the organising of the Air Service should be run. He was not so certain as Lord Montagu was that the change could be made at the present moment. He saw the goal they ought to aim at, but had a little doubt whether they could arrive at it without disorganising the two services to such an extent as, perhaps, to nullify the advantage that might be gained. He was certain that eventually the Air Service was going to play perhaps the most prominent part—he would not say in this war, but in the future advance of our Empire—and he was certain that any help that could be given to those services ought to be given. There was no magic in having one organisation or in having a Minister at the head of it as long as they got a body that gave them what was wanted and a head who was able to secure from the Government proper consideration and assistance. He saw the difficulty of the proposal for amalgamation at the present moment. They would have to alter the whole of the rates of pay and they would have to alter the discipline. It was necessary to think out more carefully than was possible at this moment on what system men would be taken into the Flying Corps. The flying life of a man was comparatively short; as a rule, he supposed, a man ceased actual flying by the time he was 30 years old.

Lord Montagu remarked that this depended very much upon the individual. Some men were young at 50 years, others were old at 30.

The Earl of Derby, resuming, said he felt that in this matter we must be content to go comparatively slowly provided we did go in the right direction, and he believed the formation of Lord Curzon's Committee was a step in that direction.

Referring to the committee of which he was the retiring chairman, he said the committee were told to co-ordinate the designs of machines and the places of their manufacture. It was absolutely essential that that work for both the Army and the Navy should be carried on in the same building, but that arrangement was negatived. He was able to secure one small advantage, as he hoped it would prove, to Lord Curzon. Sir David Henderson, who met him in every possible way, at his request got the Army Council to appoint a committee, with Sir R. Burbidge as the chairman, to inquire into the working of the air factory at Farnborough. Notwithstanding that he was chairman of the committee, he could only get that committee of inquiry appointed by the good will of Sir D. Henderson and the Army Council, although it was essential that the matter should be inquired into. He hoped the House would realise that he did not resign without feeling that it was impossible to keep such a position without explaining personally to the nation how powerless he was to perform the duties which they believed him to have undertaken. The chief difficulty which it seemed to him that Lord Curzon would find was that no definite air service policy was laid down for the Army and for the Navy. Until this was done it was impossible to provide an efficient service. He hoped that his noble friend, as a member of the Cabinet, would be able to secure such a definite policy to which the Army and the Navy could work with the energy which all knew that those services could display. This House had not had the advantage of hearing an exact statement of the position of all the members of the new committee; but it seemed to him that what happened to the committee of which he was the chairman was happening to Lord Curzon's Committee, and that the War Office was getting more power upon it than was the Admiralty.

Earl Curzon said it was one of the conditions of the composition of the Board that the senior representative of the Admiralty was to be a member of the Board of Admiralty, just as General Sir D. Henderson was a member of the Army Council. It was in that capacity that the third Sea Lord, Rear-Admiral Tudor, attended a meeting of the Board yesterday.

The Earl of Derby replied that he had understood from the statement made in the House of Commons that the representative of the Admiralty was to attend the Board of Admiralty only when air matters were discussed. If there was equality of power between the Army and the Navy in this matter one of the objections which he felt was to a great extent removed. He was glad that the subject had been brought forward, and had at last received the full attention of the Government. He was glad that the noble earl had been

appointed the chairman, and he wished him all possible success in that position because that meant success to our armies in the field.

The Marquess of Crewe said that it seemed almost to have been implied that the Government had shown and was continuing to show complete and most unworthy indifference to the future of the Air Service. Lord Derby gave them rather more credit for doing their best to bring about as much improvement as they could, in particular, by the appointment of a new Air Board with Lord Curzon to preside over it. As regards the composition of that Board, one or two points ought to be made clear.

Lord Montagu spoke of the position his noble friend would be placed in if he did not agree with the other members of his Board. The President could not be placed in that position. This was not a Board that voted; it simply advised the President. If he disagreed with them, he had his own way. It was, of course, possible for the representative of one of the departments to differ with the President. But there was no question of the President being outvoted, and it was therefore not true to state that he was not master in his own house. He was not master in other people's houses—the War Office and the Admiralty—but so far as his own Board was concerned he was supreme, subject to the appeal to the War Committee, which he had already described. Lord Montagu spoke of the appointment of the legally constituted committee. That committee was appointed in pursuance of a promise made by Mr. Tennant in order to deal with certain charges of a damaging kind against the department. He had no doubt valuable information would be brought out in the examination before that committee. But it had no definite bearing on the work of Lord Curzon and the Board. That was an entirely separate matter. He had no wish to go back upon the past history of the Board. He confessed he had been under the impression that Lord Montagu's and Lord Derby's resignations of their functions had been somewhat hurried, and might at least have been delayed. He recognised the force of what the noble lords said. They imagined when they joined the Board that their functions would be of a more far-reaching character than proved to be the case. He had no right to ask whether either of the noble lords made any attempt to get these functions enlarged. That was not his point, except in so far as it might conceivably affect the opinion which may be held as to whether their resignation was absolutely necessary.

As to our policy, so far as he was able to apprehend Lord Montagu's point of view he seemed to base the notion of lack of policy on the fact that the whole Air Service is conducted by two separate departments, and not sufficiently unified. He thought it was important not to ignore the example of other countries. What had taken place in France? An Air Ministry was formed, but the plan was subsequently abandoned in favour of a return to a military director. As to Germany he was imperfectly informed, but his information was that in Germany, whose conditions, he took it, were more parallel to our own, than those of any other country, the two Services were kept entirely distinct, working, no doubt, with a certain degree of co-ordination, but not, so far as he knew, under one common authority except in so far as they are under the Emperor himself.

The Earl of Derby: Are they not under one common authority for supplies?

The Marquess of Crewe: He was afraid he could not answer that question. As to a completely unified service, Lord Derby did not take the same view of its advantage as Lord Montagu did. He saw the practical difficulties in getting anything like complete unification. There was the question of the formation of an entirely new personnel where men ceased to be soldiers or sailors, with the loss of pension rights and of personal opportunities which were open to men who had served in the Army and Navy. These questions were obviously of very great difficulty, and it certainly seemed at first sight that to attempt to solve them in the middle of the war would be an act of great rashness.

Lord Montagu put the future of aircraft very high. In his last speech they were all greatly impressed by visions that he held out of the possibility of the main conflict of future wars being in the air rather than by sea or land. He took, indeed, a wide and enthusiastic view of the possibilities of the future, as did the hero of Tennyson's poem 70 or 80 years ago, when he foreshadowed something of what is going on now in the air. Difficulties in ordinary peace times would attend the attempt to increase our air fleet on a very large scale. Whilst willing to pay a certain sum for national defence, people would not pay an unlimited amount. In the old days when they had discussions about universal service the strongest argument against it, as it seemed to him, was that it would mean spending so many more millions upon the Army, and there would to some extent follow a movement to diminish the vote for the Navy. If Lord Montagu's visions were realised, and the air service became the prime object of attention for purposes of national defence, both the War Office and the Admiralty votes might suffer. It was not

possible for them to accept the motion, the terms of which suggest something considerably beyond what the Government have done in creating new power.

Lord Northcliffe said he felt that in all these discussions they had lost sight of the urgent need for speed in these matters. He was sure, however, that this somewhat shadowy Board must develop into an Air Ministry. As one noble lord remarked, "It will come from outside pressure." Personally, he had criticised the composition of this Board, but he entirely agreed with Lord Milner, that they must sink differences and give it the utmost support in their power, and for that reason he was attending the Committee. There were several things absolutely essential for the success of the Board. The first was that it should have its own Board of Invention. At the present time, to his knowledge, doubtless owing to the great pressure of the time, inventors who might have revolutionary and beneficent schemes in their possession had to wait for weeks and for months before they could get a decision. It happened that the particular machine they were discussing that night was invented not by aeronauts, but by two young men who were bicycle repairers. They published their scheme to the world, they communicated with the great aeronautical societies of the world, and no notice was taken of them. In the same way it was more than possible that one or two or three of the great revolutions necessary for flying machines might be in the mind of some person in this country to-day, and they must remember that this machine is infinitely more important to us than to any other nation in the world. This machine has entirely changed the position of our kingdom from being an isle to being part of the continent. They could not therefore model our Air Ministry on that of any other country. He would earnestly suggest to the noble earl who was undertaking this very arduous task that one of the first changes he makes should be to establish his own Board of Inventions and see that inventions were carefully and quickly examined.

Another suggestion he made was that much greater encouragement should be given to manufacturers. A few weeks ago he knew of a factory that was crying for work. We could not expect to build up establishments to enable us to cope with the comparatively small German output—small by comparison with what we shall certainly require—unless the Government offer financial assistance to worthy manufacturers able to guarantee a proper output. People talk as if we should require 10,000, 20,000, or 50,000 aeroplanes. He conceived it must be essential, and probably before the end of this war. He took a rather longer view of the war than some. He contended it was essential that we put aeroplane construction on a footing where the new Minister would be able to get as many machines as he required when and where he required them. The system of construction in Germany was to give out the work in part to manufacturers all over the Empire. These parts were then assembled at great central factories, with the result that each part of an aeroplane was produced by a specialist. That was not the case here. We gave orders for aeroplanes to numbers of manufacturers, and they turned out aeroplanes as good as any in the world, but they were produced to his knowledge more slowly, and he should imagine at a greater cost. The system of central assemblage of parts was one that was adopted in almost every great manufacturing industry of the world, and he thought it was essential to the aeroplane industry.

Yet another suggestion he might be allowed to make was better and increased provision for the training of flying men. This was the time of year when men could be taught flying in the greatest numbers, and in half the time that was required in the windy months of winter. He thought it was so urgent that we should increase our flying men, and as rapidly as possible, that he thought we ought to adopt the policy inaugurated by the practical inventors of the aeroplane, who, when they came to Europe and found ours a difficult country to fly in by reason of the wind, took a careful look round the likely places in Europe and settled to teach Frenchmen to fly, and chose Pau, close to the Pyrenees, because they knew it was almost the most windless place near any great military centre. He believed if we deferred the training of large bodies of men till the autumn and winter we should be lamentably short next year, when there will be a great need.

We had proved already in this war that the machines were sometimes inferior and sometimes, it is true, superior, but we had proved that from the beginning of flying we had had a national aptitude for it. That was found by the inventors of the aeroplane directly they came to Europe. He knew them both well, and he knew their admiration and respect for the adaptability of our people. Because, probably, we were accustomed to the sea, we are able to navigate the air. They held our flying men in the highest esteem. Unfortunately, we have not shown that interest in this most vital question to our nation that we should, but he thought that our new Air Minister, for such he conceived him to be, such he thought the Germans would make him, could do no better

service than, first, to encourage inventions, secondly, to develop manufacture, and, thirdly, to provide far greater training facilities for our flying men.

Viscount Galway, continuing the debate on the following day, expressed cordial agreement with the main lines of the speeches of Lord Montagu and Lord Derby. He said that so far as he could gather we had not yet got the fleet of airships which had been promised. Three and a half years ago, when he was in Germany, he went up in a German Zeppelin, and was about five hours in the air. He was much struck by the steadiness of the ship, the ease with which it seemed to be steered, and the rapidity with which it gained a greater altitude. The mails of that day were carried by the ship as an experiment. Although there was a fairly strong breeze the ship was able to remain perfectly stationary over a drill ground for about a quarter of an hour, whilst it dropped the mail bags by means of parachutes. He urged on the new Board to consider whether more use ought not to be made of lighter-than-air machines. He congratulated the President of the Board on not having any lawyers on that body.

He had been struck by Lord Northcliffe's allusion to the great block in the inventions department and the long time required to get through. He hoped Lord Curzon would take it on himself to institute a board of his own connected with his own department to which every invention calculated to assist the aerial service could be submitted. He also urged that for carrying out the aerial service they must look to the young men. The more they were trusted the greater would be the benefit to this country. He hoped that Lord Montagu would press his motion to a division if it were not accepted by the Government.

Lord Grimthorpe observed that if the success of the new Board depended, as Lord Montagu had suggested, on the chairman being master in his own house, they might regard the Board's success under Lord Curzon's chairmanship as assured. It was high time the Air Service ceased to be under the tutelage of two different departments. An Air Service was of more importance to us than to any other Power, and for us supremacy in the air was as essential for safety as supremacy at sea. Under the existing arrangements senior officers in the Service necessarily had not the same practical experience as the junior officers, and had not had proper training. This incapacitated them from taking intelligent command. They were transferred from duties they knew into a service of which they had little knowledge, and were put in command over the heads of other people who had the knowledge. There resulted friction, misunderstanding, and inefficiency. There was a danger of the repression of the junior officers' qualities. He hoped Lord Curzon would not be daunted by difficulties, and he insisted that the country must now have a separate service for the air.

Lord Beresford said the speech of the noble lord pointed to the enormous difficulties that attended the creation of a new arm, but these difficulties could be surmounted and would not militate against the Air Service very long. He agreed with nearly all Lord Montagu had said, but would like to utter a note of warning on one point. The motion said "the time had arrived when the supply of men and materials should be concentrated under single control, at the same time leaving the executive power over naval and military aircraft with the Army and Navy, as at present." He thought everything pointed to that; but it was never a good plan for one service to be dependent on another. In this case they were going to have an Air Board that would differentiate between the services and so make the Air Service efficient. It was very easy to promote friction, but it was also easy to promote good comradeship. There was no reason why they should not take officers and men from the two services or from any other position. With regard to the shortage of air vessels, it was more dangerous to the Fleet than it was to the Army.

He thought with Lord Northcliffe that the Board should have its own board of invention. Everything connected with the Air Service or with the scientific side of it ought to be under the Board, and it was clear it should be able to buy its own material, make its own designs, do all its own construction, and have the entire training of the three people—the pilot, the observer, and the artisan—who were necessary for every aircraft. He thought the Board was very much on the lines suggested by Lord Montagu's motion; certainly it was a distinct move in the direction he indicated. The House would be pleased that Lord Curzon was the chairman, but he hoped they would be told who the other members were. One thing was imperative, that was, that no one should be on the Board who had got it into his head that it was not going to be a success. He asked if Lord Curzon was also chairman of the Tonnage Committee. If so, he thought it was too much even for him to undertake. He urged the noble earl to scrap all useless machines. You might have a thing to-day which would be obsolete in four months' time. We began badly, ordering an enormous

number of machines without trying them. We had ordered 850 Curtiss (American) machines at the cost of over a million and a half, and no date was mentioned for delivery. He asked what had become of the Handley Page type of machine and the Sparrow. They ought to be scrapped at once. He hoped the Government would show foresight, at last, in the matter of the Air Service. Let them begin by making out the respective duties which the Army and the Navy had to do; train the Air Service as a whole and then draft the men into the Army and the Navy as required; get the best designs possible, and prove the worth of the machines before ordering so many, as was the case in the past; and then, he thought, we would be as predominant in the air as we were on the sea.

Viscount Haldane said the moral of the whole situation with which the country was confronted was the consequence of the neglect of the maxim, "Think first before you act." There was a good deal of talk about the application of science, as though we could go to somebody for ready-made ideas and then use them. It was trained minds that were wanted, and those could only be got by giving up the national habit of paying no attention to ideas. He was glad the Government had taken the course not of setting up an Air Ministry, which had to do something without knowing distinctly all that it had to do, but a Board which was to survey the ground and determine what were to be the functions of the Air Service. He entirely agreed with what had been said as to the tremendous importance which the Air Service would assume in warfare. But that would not arise in the course of the present war. It was a matter of the not far distant future. The first duty of the Board should be to determine what kind of machines should be used and the quantities in which they should be ordered.

Lord Northcliffe had said very truly that there was a great waste in one manufacturer making all the parts of a machine, and that the parts should be distributed. He thought that was very important. As regarded various parts, there was much that could be standardised provided they knew exactly what the part was. This matter had been discussed as if these things had never been thought of. They were thought of very much. Having been War Minister, he could have wished that the progress had been quicker. But the want of ideas and of scientific knowledge at that time was appalling. He saw some very distinguished inventors, including the Brothers Wright. Whilst he admired the skill of Messrs. Wright, he saw that their machine no more than any other was based on accurate, extensive scientific knowledge. He read specifications by the pound, and saw the best people we had in those days. He was driven to despair. What he saw was purely empiricism. Lord Rayleigh was persuaded to preside over a committee of experts to work out problems. They gave their attention to the structure of the atmosphere, the relation of speed and weight, and questions of material, particularly the material of lighter-than-air machines. In the design of airships and aeroplanes, unless we had knowledge and training behind us, we could not cope with the new situations which were being imposed on us by an enemy as fertile in science as we were. One of the things this Commission might bring to light might be how responsibility ought to be apportioned.

As regarded aeroplanes, as far as he could gather, he could not admit that progress had not been rapid. But in airships we had been miserable. Why? The Navy was magnificent in the construction of its ships, because it had a long tradition and a great accumulation of scientific knowledge on the subject. But it knew nothing of airships. When it was decided to hand over lighter-than-air ships to the Navy, the Navy was totally unprepared to deal with the situation. As to an Air Ministry, it was not enough in dealing with these matters to want to do something. It was also necessary to know what to do. Unless we knew what science we had at command and how to make the best use of it, satisfactory results would not be attained. In that House they did not realise what problems were in front of them, from their habit of neglecting ideas. After the war we should have to encounter things even worse than our deficiencies in airships. For years before the war German knowledge was forging an engine against us more formidable than the shells and high explosives she had employed in the war. She had been training her artisans on a scale and in a fashion we did not realise. The country would find itself after the war up against the results of the German educational system, but it would not be able to say that it had received no warning. He hoped the air service was going to teach the country the practical value of science.

Earl Curzon, after expressing the gratitude of his colleagues and himself for the very kind and even generous reception which had been given to the creation and composition of the Board, said he was very glad to hear Lord Derby and Lord Northcliffe speak in high terms of the natural aptitude shown by British airmen for service in the air. He thought that anyone who had studied the debates in this and the other House would have arrived at the con-

clusion that the Air Service was one of which the nation had every reason to be proud. From almost humble beginnings at the commencement of the war it had risen to very formidable strength. It employed tens of thousands of men, and thousands of machines, and great things had been accomplished by it. In initiative, enterprise, and courage our aviators were second to none in the world.

As regards aerial work at the front, a ceaseless interchange of aerial amenities is going on. Anyone who read the bulletins from day to day might be convinced that our airmen need not fear comparison with German aviators or any others. A daily series of almost Homeric combats were going on in the air, each one of which deserves almost a chapter in an epic. In these combats our men were showing that the mastery of the air—a phrase which he particularly disliked, and which he should use as little as possible—that the mastery of the air was a thing that oscillates from side to side, and if it expressed anything at all, rest as often, if not oftener, with our men as with the enemy. As regards the defence of our own shores, if the enemy had not desisted from these murderous raids—and though he may be contemplating something bigger—yet at the same time it could not be denied that the defences both of London and the country are much more formidable than they were a short time ago. The enemy's pilots were more chary about visiting vulnerable places which they know to be well defended. They flew at a great height, and they often returned without having effected anything. That and the increasing number brought down were causes for increasing satisfaction—at any rate they are reasons why anybody speaking for the air service should not be apologetic or disheartened.

So much for the past. There remained a great deal to be done, particularly on the administrative side, both in co-ordinating effort, in supplying machines, and in the organisation of material. There they came to the application of scientific knowledge to the practice of this arm of war. That was a branch of the work with which he would be concerned. On the last occasion when the question of the air came before the House, an attempt had been made to introduce greater co-ordination into their system, to prevent the competition and overlapping known to exist between the two great fighting departments, and particularly in regard to design and supply. He entirely agreed with the two members of that Committee—Lord Derby and Lord Montagu—that the Committee was hampered from the start, and, in his belief, foredoomed to failure, by the exceedingly restricted nature of the reference. After meetings on several occasions, extending over a period of some weeks, the two noble lords retired, but he should not like it to be thought that Lord Derby's Committee did nothing; on the contrary, it accomplished real and valuable work, and cleared away many misunderstandings. It seemed to him from the report of their proceedings, that Lord Derby was always seeking to guide the Committee in the right direction and that the Committee was always hovering on the brink of larger decisions. He agreed with Lord Derby that it was more than doubtful whether the Committee was empowered or expected to discuss policy. It certainly had no effective authority to arrive at a decision. It was in these circumstances that the Government were called upon to review the situation and to find a fresh solution. Several alternative methods of procedure were before them. It would have been possible, but he thought it would have been futile, to reconstitute the Committee under another chairman, with a slight expansion of powers and perhaps another name. It might have been possible, but he thought it would have been inexpedient, to revert to the *status quo ante* and to dispense with the Committee or a board altogether. In that case the defence of the existing system would have rested with the two departments, as it has hitherto done, and in passing he thought that in many respects those two departments put up a much better defence of their administrative action than a good many of their critics believe. He thought, moreover, it would have been impracticable, because undoubtedly the examination given to the existing system did reveal many flaws in its dual nature, and he thought the knowledge that had been acquired clearly pointed to the desirability of appointing some external authority with time to think, with power to co-ordinate and to supervise, and with a really effective appeal to what is, in these circumstances, the final tribunal, namely, the War Committee of the Cabinet Council.

There were in reality only two solutions before the Government. One was the creation straightway of a separate Air Department with an Air Minister at its head; the other the creation of a new authority with substantially larger powers than that enjoyed by Lord Derby's Committee and much wider instructions. A noble lord asked why the Derby solution was not adopted. It was because there was not that measure of agreement between the War Office and the Admiralty which would have rendered such solution easy. It would have been and indeed was resisted by the Admiralty. The introduction of so large a scheme could, he was convinced, only have been accomplished at the present time at the cost of dislocation, of

friction, of the rupture of long standing ties and associations, which would not have been desirable at any time, but would have been perilous at this stage of the war. He knew that these views were taken very strongly by Lord Derby himself. Ardent reformer as he is, the undertaking of so complete a change at the present time was, in his view, not to be thought of. The utmost that Lord Montagu had to say for the adoption of this larger plan was that it was better to be too soon than too late. As a general proposition that was sound, but he submitted that, in war time more especially, there was a mean between the two which was better than either too soon or too late, and that was just the right moment. The whole of the contention of that part of his speech was that the present is not the exact moment at which that large change should be effected.

Something had been said about the views entertained by the Army and Navy with respect to the use of aircraft by them and of the close connection which that branch of the service bears to their work. Although he did not altogether share those views, he thought it was only fair that the point of view of the departments concerned should be borne in mind. Both these departments looked upon air work as an integral part of their policy and their organisation.

There was a further difficulty in proceeding to more drastic solutions. The task of setting up a new department, with full executive authority, with large financial powers, with complete control of the personnel of the two branches of the Air Service, with full responsibility for contracts, design, and supply of machines, with an independent organisation and staff, would have involved very great and continuous effort in the midst of a great war, which strained every energy to the utmost, and might, he thought, have exercised a disturbing influence. He pointed out that there is no analogy with the Ministry of Munitions. The Minister of Munitions was appointed as a Minister of Supply for a particular class of article for the Army. As Minister of Munitions he has nothing to do with strategy or policy, which marks the case off very sharply from the Air Service. Then there were practical objections arising out of pay and discipline to the organisation of a single Air Service at the present time. These were the main considerations which decided the Government against embarking on so great an experiment in the middle of a war.

He added that such an Air Ministry or Air Department was destined to come. He saw before himself, before many years had passed—it might even be sooner—a dream of a single service under a single head, under a single roof, with a single organisation. Such a unification he could not believe to be beyond the administrative genius of their race. But if he was right in that, he would sooner see it come—as in the past few months he had seen military compulsion come—as the result of a concordat between all those who are interested in the matter, as the result of a cordial acceptance of the principle by both services and both departments, with the avowed support of the Secretary of State for War and the First Lord of the Admiralty. The Board which had been appointed would undoubtedly hold this consummation in view. It was one of their duties to explore the ground and to examine the possibilities of such a solution. One day it would be their business to report to His Majesty's Government on the matter, but in the meantime he thought he could assure the House that they had more immediate and pressing duties to perform. For the reasons stated he could not accept Lord Montagu's motion. It was really one, rather cleverly disguised, for the immediate creation of an Air Department.

Lord Montagu said he particularly disclaimed any idea of an Air Ministry at present.

Earl Curzon said that if he might take the terms of the motion, Lord Montagu was really proposing that there should be no longer divided control or responsibility of two separate departments, and that both men and material should at once be concentrated under one control.

Lord Montagu: For the purposes of supply.

Earl Curzon said he would really ask the noble lord to consider the position of the Board and himself in the matter. He had told them that he meant to give them his support, that he did not want to embarrass him, and at the same time he was going to ask them to vote for a motion which practically condemned the organisation of the department for which he was responsible, and pronounced in favour of a revolution which for the reasons he had given it was impossible at the moment to carry out. If the noble lord carried his motion to a division, Lord Curzon asked the House, out of regard for the work which they had undertaken in circumstances of great difficulty, to be kind enough not to follow him into the lobby.

The Board differed substantially from Lord Derby's Committee in composition, intention, and in powers. It was directly charged with thinking out and formulating a policy and making recommendations to the War Committee of the Cabinet. For those reasons it was decided that the Board should have as president a Cabinet Minister, not because a Cabinet Minister knows more—

many people think he knows less—than other men, but because a Cabinet Minister would be able to examine impartially, and arbitrate between the claims of the two departments, confer on equal terms with the Parliamentary chiefs of those departments, take his case into the Cabinet and argue it, if desired, and in the last resort have it appear on the schedule of the final court of appeal, the War Committee of the Cabinet. It was not a post which any public man would welcome, and he ventured to think it was not a post which any public man could refuse. He was bound to say that among the correspondence he had received since his acceptance of the office there were far more letters of condolence than of congratulation, and he felt he should need all the sympathy and support he could get. Mr. Churchill predicted that the future of the Board would either be one of harmless impotence or a continuance of first-class rows. At all events one chance of disturbance had been eliminated by the disappearance of his right hon. friend from the ranks of the Government. For had he come into collision with a Minister of so vivid a personality, with so great an interest in the Air Service, and with such memories of contributions to that service by himself as are enjoyed by his right hon. friend, he shuddered to think what might have been his fate.

It had very naturally been pointed out that he did not possess and could not claim any special knowledge of the air. But if that be the test applied he erred in good company, because it was not the test we had ever applied in this country to ministerial or departmental administration. Whatever his disqualifications were, in interest and enthusiasm in the work of the air he was second to none. Ever since the beginning of the war he had felt convinced that the Air Service had a great feature not merely in determining the issues of the war, but in the part which it would play in the defence of this country and in the warfare of the future. He believed the time would come when the air arm would play a part in warfare scarcely conceivable now.

He was asked to say something about the composition of the Board. It was decided that there should be placed on it two representatives respectively of the Admiralty and the War Office, and in order that those representatives should speak with the highest authority on behalf of their departments it was decided that the senior officer representing the Admiralty should be a member of the Board of Admiralty or attached to the Board of Admiralty for the purpose; and that the senior military representative should have a seat on the Army Council. Accordingly the two representatives of the Admiralty now sitting were the Third Sea Lord, Admiral Tudor, and Admiral Vaughan-Lee. The two representatives of the War Office were Sir David Henderson, Director-General of Aeronautics, and General Brander. Then there were the independent members. He should have been very reluctant to accept the office had he not had the advantage of the co-operation of Lord Sydenham. He could not say how fortunate they were to have obtained the services of a man of such wide experience in varied capacities. The representative of the Board in the House of Commons would be Major Baird.

They had secured a habitation for themselves in close proximity to the Admiralty and the War Office, No. 19, Carlton House Terrace. There a modest secretariat had been established, the chief of which was the permanent secretary, being a very capable civilian, Sir Paul Hervey, who had had service in India, the War Office, Egypt, and elsewhere, and as assistant secretary to him there had been nominated Commander Groves, who has an almost unique experience of flying on the naval side, and who has been brought back for the purpose from Dunkirk, where he had been the right-hand man of Admiral Bacon.

He was glad Lord Northcliffe was to be one of the first to place his views before them. Lord Montagu was going to do the same. Lord Haldane was going to do the same. He hoped they would at once establish contact with all authorities and experts, and they would take the earliest steps to get into communication with scientific bodies. One of their instructions was to get into touch with various bodies of inventors who had been experimenting since the war broke out, and they should regard as one of our foremost duties the exploration of the path of invention.

As regards the powers of the Board, and perhaps more particularly the Chairman, Lord Montagu drew a rather distressing picture of what would happen if the Chairman disagreed with the Board. He asked that the Chairman should be master in his own house, and Lord Crewe replied that that was precisely the desire of the Government, but that he could not expect to be master in other people's houses. That position he (Lord Curzon) accepted. The Board was intended to be an advisory board. No question would be decided by voting. The situation therefore could not arise in which the President would be overruled by his colleagues, nor indeed could a situation arise in which the Admiralty and the War Office would vote against each other or come to a direct issue. What he thought would happen would be this. The President, acting in close con-

sultation with his colleagues, would endeavour to arrive at decisions on various subjects. If the representatives of the Admiralty or the War Office on the Board felt that the decisions to which he came were inconsistent with the prerogatives, functions, or conception of duty entertained by their departments, there would be nothing whatever to prevent them from acquainting the Army Council and the Board of Admiralty with the matter, and if they found their action was supported by the Secretary for War and the First Lord, he imagined the next step would be for these high officers to discuss the matter with the President of the Board. In the event of their not agreeing, the reference to the War Committee, the final court of appeal, would take place. The procedure was simple and ought not to be productive of friction if worked with a reasonable amount of tact. It was sufficiently elastic and not tied down too closely by narrow rules of operation.

They would exert themselves to continue the work already begun by Lord Derby's Committee in preventing rivalry and overlapping between the two departments. Then their desire was to examine—indeed, they had already commenced—one by one such questions as the position in respect of machines and men at the front and in the various theatres of war, the organisation of long-range offensive operations, the defence of this country by aircraft and guns against hostile aeroplanes, the use and development of lighter-than-air machines, the supply of the best types of aeroplanes and engines, the armament of aircraft, national air factories, new inventions, and provision for flying grounds and training facilities. Those were the questions which he thought they would attempt to examine at a very early date. Arising out of these would, of course, spring the necessity for attempting to formulate a policy for the two Services and the two departments and providing them with machinery to carry that out.

He passed to a rather more remote category of questions. In the background they would certainly hold in view, though he thought it would be unwise to pronounce upon them until they had acquired a good deal of experience, such questions as those named by Lord Derby—the possibility or desirability of the amalgamation of the designing and contract branches; also of the respective staffs of the two departments, the formation of a national air service, and the institution of a joint national factory. Those were questions on which it would be absolutely dangerous for the Government to rush to a conclusion. In the further background there would always be looming the question of the possibility or desirability at a future date of creating a single department under a single Minister.

He hoped noble lords would not expect too much of them. The Board was an experiment, but it was a sincere and honest experiment which its members meant to turn, so far as they could, to the best account. He solicited the support of the two great Departments of the Army and the Navy, with whom the Board had neither desire nor object in coming in any way into conflict, whose battles they would in many cases be fighting themselves, and whose interests they desired to serve. Finally, he asked the sympathy both of the experts who knew so much and of the public at large who knew so little in the endeavour to make the Air Service one which would not merely contribute to success in the war in which they were engaged, but should be a potent instrument of national strength in the future.

Lord Montagu said the debate had been very useful, even if it had done nothing else than produce the very clear speech of Lord Curzon. His difficulties in administration would be greater, he thought, than he anticipated. He was afraid he could not take quite the same hopeful view of his relations with the Admiralty and the War Office that he took. Perhaps he might be successful if he remembered the Roman maxim, *divide et impera*. If he could get one department on his side he could probably carry his point. Letters which had been received showed that a bad state of things still existed. He had been given a letter from a young officer which showed what a heartbreaking state of things these young officers sometimes had to meet. He would read, though he could not approve all his words. He said:—

"The machines left Gosport last Saturday—12 in number—at the present moment three remain intact. They set out for Dover in fine weather. One blew off a cylinder head, which crashed through the planes, shortly after starting, but it managed to struggle to Shoreham on the other eight cylinders and landed safely. Another developed engine trouble and turned back, but had to land on the way and was smashed. A third had engine trouble further afield, and landing on unfavourable ground was wrecked completely. A snowstorm overtook a fourth, which was also damaged—extent unknown. Three more had engine breakdowns—two being entirely 'done in,' but the other was more successful and only smashed the under-carriage. An eighth arrived at Dover without trouble, but was smashed to atoms on landing. This was our best pilot, too. He is in hospital now! Four landed safely at Dover and crossed the Channel next day. Three of them got to G.H.Q. without

mishap, but the other dissolved itself into a heap of wreckage in the middle of the aerodrome! So that's that! Twelve started—four arrived—three only are still able to fly! Two, possibly three, can be repaired. The rest are gone for ever, and one pilot (the best) is in hospital. Oh! listen to my tale of woe! Heaven knows what will happen to us now—poor old 29! Perhaps the 'powers that be' will begin faintly to realise what the youngest subaltern in the R.F.C. has known all along—viz., that a certain engine is no good."

As to the *personnel* of the Committee, he understood that Admiral Tudor, the Third Sea Lord, was one representative of the Admiralty, and that the other was to be Admiral Vaughan-Lee. Without wishing to reflect upon either of them, he was sure that they would be the last to claim any knowledge of aviation, and he suggested that, at any rate, one of the representatives of the Admiralty should have such technical knowledge. General Sir D. Henderson had technical knowledge; but about him there was this anomaly, that he was General Officer Commanding the Royal Flying Corps, and at the same time a member of the Army Council. It was an unusual combination of positions, for he had to do both the thinking and the administrative work. Lord Montagu suggested that General Henderson was already very much overworked, and that the Government should let him do one thing or the other; he thought it was impossible for any man to do both perfectly. The Army Council, he was



The Air Board.

THE full constitution of the Air Board has now been announced as follows: Lord Curzon (President), Lord Sydenham, Rear-Admiral Tudor and Rear-Admiral Vaughan-Lee, naval representatives; Lieut.-General Sir David Henderson and Brig.-General Brander, military representatives; Major Baird, M.P., representing the Board in the House of Commons. Sir Paul Hervey is the Secretary, and Commander Groves the Under Secretary. Accommodation for the Board has been provided at 19, Carlton House Terrace, where there was a full meeting on May 26th. Lord North-

given to understand, was one of the delightful fictions of our administrative life—one of the phantoms which was said to exist, but really did not. It was said to meet very rarely. Sir David Henderson might be to the Army Council what the Archbishop of Canterbury was as a member of the Board of Trade—he may add moral weight to it and act as a sky pilot.

The expenditure on aviation was unlike money lost in war. Millions of money had been spent upon guns, ships, and munitions, and most of the expenditure on war was utterly wasted and was for the destruction of mankind. The expenditure on aviation in war would accelerate the progress of aviation generally, and was therefore not only for the purpose of destruction, but would be for the benefit of humanity afterwards. That was an important point of difference.

In framing his motion he particularly excluded from it any mention of Ministers. It asked for the co-ordination of the supply of men and materials for the Air Service under one head. It went little, if at all, further than the noble earl himself proposed, and he thought the House would do well to place on record the opinion which it expressed. He would, therefore, divide the House, even if he found only one noble lord to act as a teller with him.

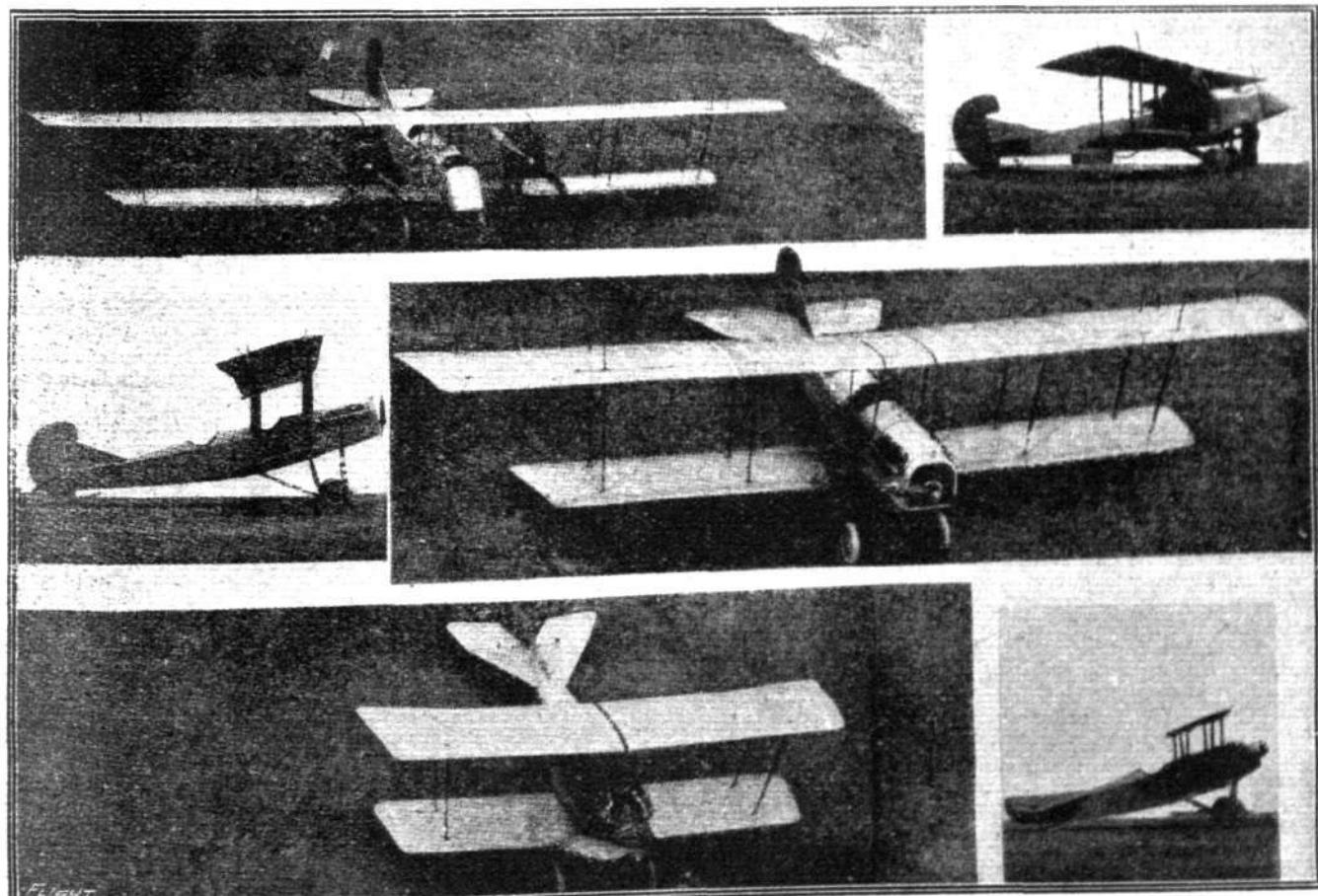
The House was then cleared in order that a division might be taken; but before the question was put Lord Montagu said he found that the sense of the House was against a division, and he would withdraw the motion. The motion was by leave withdrawn.



cliff attended and made a statement, while Lord Derby was also present at part of the sitting.

As It Should Be.

RAILWAY companies and the Board of Trade, said Mr. J. H. Thomas, on May 28th, at Hull, had come to an agreement that a railwayman killed or injured when on duty through an air raid or bombardment would not be denied any of the provisions of the Workmen's Compensation Act, thus restoring the position to what it was before the recent judgment.



FLIGHT

THREE MEMBERS OF THE CURTISS FAMILY.—The "baby" tractor has a span of about 20 ft. and is expected to develop a speed of somewhere in the neighbourhood of 100 m.p.h. The machine in the centre is the military two-seater tractor equipped with a 160 h.p. engine, while the large biplane at the top of the picture is one of the new twin engine machines, fitted with two 160 h.p. motors. All are at the Atlantic Coast Aeronaautical Station at Newport News, Virginia. The illustrations are reproduced by courtesy of *Aerial Age*.

THE R.F.C. INQUIRY.

THE third sitting of the Judicial Committee set up to investigate charges made against the administration and command of the Royal Flying Corps was held on May 25th in the Grand Committee Room, Westminster Hall. Mr. Justice Bailhache presided, and General Sir H. Smith-Dorrien was present for the first time. General Henderson again represented the Royal Flying Corps.

Mr. Joynson-Hicks, M.P., who was the first witness, said he proposed to discard certain minor things and concentrate his statement on the gun defences on the East Coast, the position of our aeroplanes in Flanders, and instances of the very bad condition of affairs in East Africa.

The Chairman said the gun defences were outside the scope of the inquiry, but the question of aeroplanes on the East Coast was within their reference.

General Henderson pointed out that guns had nothing to do with the Royal Flying Corps.

Mr. Joynson-Hicks said in that case he would go straight to the position in Flanders. He had always maintained that we had not in any way the mastery of the air, though it had been stated in the House of Commons by Mr. Bonar Law and Mr. Tennant that we had a very large supremacy in the air and that our aeroplanes were better than the German ones. He had mentioned at the last sitting that he had communicated with a very large number of officers on the matter. Though the majority of these did not wish their names mentioned for obvious reasons, there was one, Major George Lane-Fox, M.P., Yorkshire Hussars, who had no such objection. Writing from the Western front on February 10th, this officer said:—"I should like to tell you how regularly the official reports from France seem to lie as to our supposed mastery here. This mastery may prevail elsewhere, but it certainly does not at this particular spot. Yesterday I was taking a party up to the trenches, and we were held up by two German machines which were reconnoitring the whole of the district without interference of any sort." The letter also stated that the German machines treated our anti-aircraft guns with contempt, and that our machines were not so good as the German aeroplanes, and were inferior in speed and climbing power. Major Lane-Fox subsequently wrote stating that things were very much better, there had been great improvement, and some of our machines have the advantage of the German.

A field officer in the Guards' division had written very strongly that to say we had obtained superiority in the air was quite untrue. "I and my officers often go out in the morning," he said, "and watch our aeroplanes being driven off by the German machines, and in our billets, seven miles behind, we are bombed every morning by German machines which come over and are not driven off by our machines."

Mr. Joynson-Hicks suggested that the Committee should get, through Headquarters in France, some of the official reports as to the condition of things there. He then read extracts from letters from officers at the front. Writing in February, an officer in the Royal Flying Corps said:—"The German Fokker machine has been in active business for a long time, and it has increased and multiplied so fast that their depredations have compelled the attention of the authorities." Another officer in the same month said Mr. Tennant's statement in the House that we had machines quite equal to the Fokker was tantamount to a lie. An officer in the Flying Corps, who had received the Military Cross, wrote:—"We have not got the mastery of the air. We have the pluck, but we have not got the machines, the organisation, or anti-aircraft guns of any value." That officer also told him verbally that the bulk of the machines were too slow to cope with the German fast machines.

The witness quoted the following passage from an official report issued by the Intelligence Department:—"The Fokker when in action seeks, by the exercise of its superior speed and climbing powers, to obtain a position above its adversary." That, he submitted, was an official admission that the Fokker had superior speed and climbing power. He had always contended that the difficulty we had in getting fast machines had been a lack of powerful and better engines. That, he submitted, was admitted by Mr. Balfour in the House of Commons on November 11th, when he said:—"We are making as hard as we can aeroplanes, we are making pilots, and we are making guns, but we are behindhand. We have always been behindhand in this war. It has never been denied. I am not responsible."

Another officer wrote on May 19th:—"It is untrue that we beat back the German aeroplanes. We don't. They are often over my billet, and I am six miles back. At present we are not equal to the Germans in flying, and every soldier knows it." An officer serving in East Africa wrote:—"Our people at home are wicked. They sent out flying machines with no propellers, and the spare propellers they then sent out were for another type of machine."

Mr. Joynson-Hicks said he was prepared to admit that we had now a few—a very few—machines of the fast scout type as fast as, and possibly faster than, the fastest German Fokker machine, but they were not in working numbers. They were being built to-day. Replying to the Chairman, he said he was of opinion that we could obtain absolute control of the air if we had a great number of machines. We could then carry out raids with not 20 or 30 machines, but 500 at a time. It would, he believed, be possible to force the German lines back in the way he suggested. It might cost £10,000,000, and there would be a certain loss of life, but it would be infinitesimal compared with the loss of life in a battle.

In answer to further questions, Mr. Joynson-Hicks said that many of our pilots had been asked to do too much. He added that Mr. Tennant stated in February this year that there were 835 officers and 521 civilians on the waiting list for training for pilots. He thought they ought not to be kept waiting. Information which he got from pilots was to the effect that they were not sufficiently trained in landing at night before they were told off to go up. Pressed to give further information with regard to the writers of the letters that had been read, Mr. Joynson-Hicks replied with some warmth that it was impossible. He could not break faith with them. "If the committee don't think my statements worthy of credence, it does not matter to me," he added, "but it is impossible to give the names of the officers."

At the request of the Chairman, Mr. Pemberton Billing made the following statement:—

"I ask leave to intervene for a few moments to explain the object of my presence here to-day. From my place in the House of Commons, and acting with a full and deep sense of responsibility, I made certain definite allegations concerning the administration of the Royal Flying Corps, both as regards its naval and military branches. I did that because I had been forced to the conclusion that this was the only means of directing the attention both of the Government and country to the deplorable and unnecessary waste of life and material due to the glaring defects of our air services.

"It was to remedy these defects that I surrendered my commission in the naval branch of the Royal Flying Corps and entered Parliament. I demanded an inquiry by the Admiralty and the War Office into my allegations. The Government's reply was to set up this Committee, and, as you gentlemen are aware, I have taken strong exception, and nothing so far has happened to alter my views, to the composition, and more particularly to the terms of reference, of this committee.

"But, after following the verbatim reports of your proceedings, and realising how meagre and inconclusive has been the evidence put forward by gentlemen who, like myself, are fighting for efficiency, I have come to the conclusion that I must no longer withhold even the limited evidence that your terms of reference permit me to tender, if this inquiry is not to prove abortive and, what would be worse, result in a finding of not proven, which, instead of reforming what is wrong, would have the unintentional result of perpetuating the evils of inefficiency.

"Perhaps it will be understood that it is only with a deep sense of public duty, and because I believe I can best serve the interests of the air service by so doing, that I have now decided to waive, so far as this committee is concerned, what I still regard as valid objections to the form of this inquiry and to submit evidence. These objections I set forth in my letter to you, Mr. President, and no useful purpose could be served by my occupying the time of this committee in reiterating them now. However, as the naval branch of the Royal Flying Corps is ruled out of the purview of this inquiry, the first-hand evidence which I could have tendered as a late officer in that service is ruled out also, and, as I have never been a member of the military branch of the Royal Flying Corps, my evidence is naturally limited to information from members of that service, obviously of a confidential character.

"If, through my evidence, names are unavoidably disclosed (and I need hardly say it is not my intention to disclose the names of any of my informants without their permission), I rely upon this committee to see that no one unjustly suffers because of a zealous desire for reform of the service of which he may be a member. If the committee could give some assurance on this head I am certain it would greatly facilitate the flow of information to this inquiry. Service investigations always labour under this disadvantage, which, from the standpoint of discipline, is justified; but, at the same time, tends to defeat the very aims and objects of the setting up of such an inquiry by preventing full and frank disclosures. Of course, I assume—and I should like an assurance from the committee on this point—that there will be full access to all official documents which may have a bearing on the allegations which may be put forward.

"Finally, let it be understood that, having exhausted every means in my power to secure that this inquiry should be full and comprehensive, even to the point of refusing to appear before it, I am now convinced that no action of mine will force the Government to take a more wholesome view of the position, or to challenge the accuracy of the charges against the naval branch of the Royal Flying Corps. Those charges, infinitely more serious than any charges this committee is to be permitted to investigate, must therefore, in legal parlance, go by default. And the people of this country will naturally in this decision, as in so many other decisions which the Government have taken, not fail to draw their conclusions."

The Chairman: I gather as far as this committee is concerned the net result is that you now desire to appear and give your evidence before us?

Mr. Pemberton Billing: Entirely.

The Chairman: Then we will endeavour to fix a day when we can go into your charges.

After luncheon General Henderson cross examined Mr. Joynson-Hicks, on the basis of statements made by the witness in Parliament. He first of all asked as to the origin of such terms as "mastery of the air," "supremacy in the air," "superiority," and so on. "The Flying Corps, you know," he added, "has never claimed the mastery of the air."

Mr. Joynson-Hicks: But I hope to see you get it.

Taking the various proposals made by the witness, such as that along the East Coast we should have air stations at every 40 miles, and at each station 40 machines, and 2,000 aeroplanes for bombing purposes, General Henderson asked the witness if he thought it was a physical possibility to have got the necessary number of men. Taking the witness's own figures, Sir David estimated that we should have wanted 1,680 pilots and 24,500 mechanics.

Mr. Joynson-Hicks said he thought it was desirable to have that number.

General Henderson: It is the actual physical possibility I want to get at.

Mr. Joynson-Hicks: In all probability you could not at the rate you were going have made 1,600 pilots at the time I made that speech.

General Henderson: I want to find out whether these statements are directed against the administration of the Flying Corps or whether they are pious aspirations.

Mr. Joynson-Hicks: They are distinctly pious aspirations, and if I had been the Air Minister I should have said to you at once "How near can we get to those?"

General Henderson: You say you have verified many of your cases. Have you ever verified them by applying to me?

Mr. Joynson-Hicks: No; did you expect me to?

General Henderson: Yes; it is extremely difficult for me to reply to charges brought forward on unnamed authority.

Mr. Joynson-Hicks: I agree; but I have made no personal charges.

General Henderson: Since the war began I have accepted full responsibility for what has been done. I have not been hampered, and that is why I am anxious to get these things cleared up. Do you suggest there has been no real development of the Air Service?

Mr. Joynson-Hicks: There has been no material change in the working of the main conception of the service.

Referring to a complaint that an officer had been sent to France after six weeks' training and five hours in the air, General Henderson said he had searched the records and the only officer who had been sent out after six weeks' training was an officer who had had more than five hours in the air as a pilot, and had had considerable experience as an observer previously. Every new officer who went out to France was tested by the officers there before he was allowed to take up the service.

Answering further questions, Mr. Joynson-Hicks remarked that the management of the Flying Corps before the war did not encourage English manufacturers, and the result was that we had to buy from France at the outbreak of war.

Do you know that France bought from Italy, and Germany bought from Holland?—I do not know.

You know that there was a certain Mr. Fokker who was useful to the Germans?—Yes. I have heard it said that he might have been useful to us.

Dealing with a suggestion that we might have purchased aeroplanes from America, General Henderson asked if the witness could give him the name of a good American machine, apart from any he had read of in American newspapers. If he could do so he would be very glad to hear of it.

Mr. Joynson-Hicks replied that he had made mention of a super-Fokker, and that he had information from a lady whose son was engaged in aeroplane manufacture in America that there were good machines there.

After further questions the witness remarked:—"I really think I shall confine myself to playing marbles after this inquiry. I never thought that my speeches would rise up in judgment like this. If every member of Parliament suffers as I do, I think there would be less ambition to get into the House of Commons."

General Henderson: You see, I do not always get a chance like this.

Mr. Joynson-Hicks: After you and I have had all this discussion we shall be better friends, and I shall come to you when I want to know anything.

The witness further suggested that on nights when aerial attacks were imminent at least two machines in each aerodrome should be in readiness to ascend, the engines being kept warm.

Sir David Henderson pointed out that no fighting machine was fitted with a R.A.F. engine, and that it was extremely necessary that engines should be tried before machines were started, as most of the accidents occurred through engine failure when leaving the aerodrome. In regard to the question of a patrol, that was a matter of expenditure. He proposed to call a great many pilots to see whether they agreed with Mr. Joynson-Hicks. He disagreed with the witness in his view that we had simply followed the Germans in regard to engine power.

Referring to a suggestion that aeroplane makers were left with insufficient orders, Sir David said that if the witness knew of any aeroplane maker who was short of work just now he should be very glad to know who he was.

The Witness: May I make a few inquiries on that point and let you know?

Sir David: I shall be very glad if you will.

The witness added that the general complaint was that orders were not given in larger quantities to enable manufacturers to put down their plant for them.

The enquiry was then adjourned.

The fourth sitting was held on the following day, under the presidency of Mr. Justice Baillhache.

Lord Montagu of Beaulieu was the first witness called, but before he gave evidence the Chairman explained that what the Committee desired was to get at any charges or criticisms that would direct their attention to the special matters which they thought ought to be inquired into.

Lord Montagu: I have always tried to make my criticisms constructive. I have never brought any personal charges against the Royal Flying Corps; I have attacked the system and not the persons. Lord Montagu added that some of the things stated at yesterday's inquiry ought not, in his opinion, to have been reported in the Press. They should avoid anything being published that would be of advantage to the enemy.

The Chairman: Certainly. We are anxious to avoid anything of that nature appearing. Some of the things said yesterday were specially kept out of the papers. I am sorry if anything appeared that ought not to have appeared.

Lord Montagu said he did not allege that the paper he mentioned had not exercised proper care, but it showed the necessity of great precautions being taken.

The Chairman: The trouble is that we are desirous to have this inquiry as public as possible, and I am afraid it will occasionally happen that things will appear in the papers that ought not to appear. But certainly we will be as careful as we can.

Lord Montagu then proceeded to read his statement and extracts from his speeches in the House of Lords from 1909 to 1913, copies of which were handed to the Committee.

The statement was in part as follows:—

"In 1909 the Wrights originally offered their invention to the War Office for a comparatively small sum of money—I believe—but were told that they and their invention were not wanted, and from October, 1908 (the date of flights at Le Mans—the first in Europe—by Messrs. Wright) to 1911 but little official attention was paid to the development of aviation. I attended those flights, and was at once convinced of the importance of aviation from a national point of view. In February, 1911, when I lectured on military aviation at Aldershot at the Military Society, with General Sir H. Smith-Dorrien in the chair, that officer was almost the only one in high command who had vision enough to realise the coming possibilities of the aeroplane and the rigid airship. When General (then Colonel) Seely was at the War Office he claimed, in May, 1913, to have 101 aeroplanes for the use of the Army. I challenged his statement, and said that in my belief there were only 46. General Seely asked me to go and see him about this, and after some conversation he asked Sir David (then Colonel) Henderson to come in. Sir David Henderson then produced a list of aeroplanes at different aerodromes, and gave his word that this list was correct. I did not trouble, therefore, to count them in their hangars, but accepted his word. It has since come to my knowledge that the statement I made was essentially correct, and although there were

101 in number, only 50 could really fly at that moment, which was, of course, what I meant by my statement. But on the occasion referred to I believed the official figures, and therefore I thought that it was only fair to state publicly afterwards that Colonel Seely had proved I had been misinformed. That incident was instructive, and characteristic of many Government statements.

"In 1909, 1910 and 1913, in particular, I made speeches in the House of Lords, copies of which I now lay before the Committee, and constantly wrote and spoke about the urgent necessity for more attention being paid to the subject of aviation by the Government. But my warnings fell on deaf ears; I was assured by the Government that everything possible was being done, but it was with the greatest difficulty, as Sir David Henderson knows, that proper provision for the R.F.C., small as it was in those days, could be secured. I would remind the Committee that it was originally only one corps, with naval and military branches.

"As regards the Navy, Commodore Sueter and others through these years were trying to induce the Admiralty to consider the possibilities of aviation, especially with regard to rigid airships. He also failed to convince his Board, and after one unsuccessful trial at Barrow—almost the windiest spot in the British Isles, from the meteorological reports—the building of airships was abandoned."

With regard to airships, the policy of the Government, the War Office, and the Admiralty, and of the Committee of Imperial Defence, was constantly changing. Sir David Henderson, for instance, thought in 1912 that the rigid type of airship would not be successful and opposed their being developed. He had been proved wrong, but other authorities then agreed with him. Thus the development of our air services was hampered, and matters drifted on up to the outbreak of this war, which found the country with no rigid airships and only two or three small dirigible balloons of a non-rigid type. In aeroplanes we were slightly better off due to some good scientific work at Farnborough. We were wholly unprepared for a big or even a small war.

"Notwithstanding this, the personnel, though small in numbers, was magnificent in quality, and at first they piloted the B.C. 2 C. machine with much success. Originally it was equipped with a 70 h.p. Renault engine. Eventually the 90 h.p. R.A.F. engine was fitted, and shortly after the early stages of the war the B.E. 2 C. proved its superiority, and during the first year of the war it may be said that hardly any German machine dared fly over our lines, for we had attained a certain amount of ascendancy, chiefly due to our pilots' skill and pluck.

"After last summer, however, a gradual change began to take place; more powerful German aeroplanes appeared, and the German pilots became more skilful. From that time to now, unless the information which I gathered personally at the front in October and November last, and which is reaching me constantly from the front from many pilots, brigadiers and divisional commanders, and other officers, is all incorrect, we are still at a disadvantage. I am glad to be able to tell the Committee, however, that I believe our disadvantage is now decreasing, so far as I am able to judge.

"There has been a great deal of criticism of the Royal Aircraft Factory, some of which is, I think, unfair, but much of which is sound. Instead of being, as it was originally intended to be, a small Government establishment, to be used chiefly for experimental and research purposes, it has developed into a big manufacturing concern. I think it is a mistake to have allowed this to take place. I regret to tell the Committee that the majority of manufacturers of aircraft engines and accessories, on whom the country has to depend so largely for its supplies, regard the R.A.F. with suspicion and dislike. Through fear of losing contracts or being victimised, managers or contractors are unwilling to give evidence, but I think the Committee should know that the feeling exists, and that it is to be deplored in the national interests.

"Colonel O'Gorman, the chief of the R.A.F., and his staff are also placed in the ridiculous position of being competitors and judge and jury, and being Government designers and manufacturers and at the same time critics of other people's designs and manufacture with whom they compete. They are thus in an impossible position. If, for instance, an engine of better design than theirs is submitted, and even if it is proved to be better by experiment at the R.A.F., it is difficult for the factory to acknowledge officially the inferiority of its own work, and it should not be put in this false and impossible position.

"Again, the R.A.F. had been accused, with some reason, of having become a general dumping ground for 'dud' machines, and I hear on all sides that men who are of little use in other works have gone there and been employed at higher salaries than where they came from. I believe this to be true in the main. The output, too, of the factory was poor compared with the number of men employed. As a separate committee was sitting on this question it would no doubt be investigated, and I would not pursue the matter at that moment.

"The Admiralty method, on the other hand, of having no official factory, but of ordering machines where they could best be obtained, is, I think, a method superior to that of the Royal Flying Corps, who are handicapped and prejudiced by the difficult position in which the R.A.F. had placed them."

With regard to the administration of the flying services, as the Committee were not prepared to deal with the R.N.A.S., it was not possible for him to discuss his proposals for an Imperial Air Service. At the same time he produced confidentially for the information of the Committee, memoranda, some of which he had submitted to the Cabinet as a whole, or to particular Cabinet Ministers.

It was clear that the question of aviation as a whole could not be debated by way of question and answer before a judicial committee appointed by the Army Council. It must be debated frequently in the Houses of Parliament as one of the matters of general policy for which the Government as a whole was responsible, and there would tend to be more rather than less discussion in Parliament of this subject as time went on. He declined to be considered as hostile to the R.F.C. or the R.N.A.S., many of whose personnel he knew, and for whom he had the warmest affection and admiration. He desired now, as in the past, to help them in every way he possibly could, privately and publicly.

The Chairman questioned Lord Montagu as to the attitude of aeroplane manufacturers to the Royal Aircraft Factory.

Lord Montagu said he was sorry to find an atmosphere of suspicion on the part of manufacturers towards the Royal Aircraft Factory. He did not think it was possible for a Government department to be manufacturers and designers themselves, and to insist on the submission to them of designs by private manufacturers.

Sir David Henderson: I deny that that is the case.

Lord Montagu: I think it is the case that they have to submit all their designs to the Government aircraft factory, and that creates an atmosphere of distrust. It is an unfortunate feeling, but it is prevalent all through the aircraft trade.

Mr. Balfour Browne: Is that feeling founded on the fact that the Royal Aircraft Factory is both a manufactory and a school for research?

Witness: I think it is largely due to that. I think it should be either one or the other, and not both.

If the Royal Aircraft Factory were a school of research only you would approve of it?—Entirely.

Mr. E. Shortt, M.P.: They would still have the designs before them?—Yes, but they would not be competitors. I think the naval system is better, where they obtain machines wherever they can all over the world, the result being that the aircraft trade is cordially co-operating with them. There I find a very different spirit.

Mr. Charles Bright: Isn't the Royal Aircraft Factory in the first instance an organisation for research and design?—I think that is what it ought to be.

Isn't that what it is?—I am informed not. I don't think it is.

Do you know the total number of aeroplanes manufactured by the Royal Aircraft Factory?—I think it is very small.

How many are manufactured by private firms?—I should think about 90 per cent.

Mr. Butcher, M.P., asked the witness to explain more fully what sort of suspicion existed against the Royal Aircraft Factory among private manufacturers.

Lord Montagu: They don't trust them. The general impression of the trade is not favourable to the Royal Aircraft Factory.

Sir David Henderson: I don't deny that for a moment.

The Chairman: In your view, Lord Montagu, this feeling is due to the fact that the Royal Aircraft Factory is, to some extent, a competing manufacturer?—I think that is one of the reasons. Mind you, I am not defending the feeling of the trade, but I recognise and deplore its existence.

Mr. Butcher: You say we are still at a disadvantage with the Germans in France as regards flying?—That is the opinion which reaches me, not from irresponsible subalterns, but from people such as those mentioned by Mr. Joynson-Hicks yesterday, to whose opinion you must give some weight.

You will be going further into this matter later?—Yes.

Sir Charles Parsons: As to the designs of private manufacturers, is it not true that all improvements of value come from private manufacturers, and does not that apply to ships, engines, munitions, guns and the like?—I quite agree.

Lord Montagu added that it was only just to the Aircraft Factory to say that a great deal of scientific work had been carried out at the National Physical Laboratory, at Teddington, and the Royal Aircraft Factory, and in that sense it had fulfilled its purpose. So long as the Royal Aircraft Factory was content with experimental and research work he thought it was on right lines. The proper attitude of the committee should be to encourage the private manufacturer and to establish confidence in the aircraft trade.

Sir David Henderson asked if the witness proposed to call any

evidence as to his statements about the private designs being submitted to the Royal Aircraft Factory.

Lord Montagu replied that he was not specially concerned with the trade position, but he thought the Committee should know of the feeling that existed. He suggested that some representative of the trade should be invited to come forward.

Sir David Henderson: Have you any evidence to produce that any private designs have ever been submitted to the Royal Aircraft Factory?—Under the Defence of the Realm Act I think you have the right, and exercise it, of having copies submitted of every design in aircraft.

You say that the designs are submitted by private designers to their competitors, the Royal Aircraft Factory. Have you any proof of that?—I have never met a manufacturer who would deny it. They say they have to submit their designs.

To whom?—To you. If they submit them to you they submit them to the Royal Aircraft Factory. Can you give me your word of honour that you never take—

CORRESPONDENCE.

Engineering and the War.

[1923] There has been a considerable amount of destructive criticism of our various administrations; may I venture to put forward a little constructive suggestion on one or two matters connected with engineering and the war?

The formation of a Corps of Mechanical Engineers.—Now that we have conscription and all manner of men will be swept into the Army, it is imperative that the potential utility of engineers, draughtsmen, and technical workers generally should not be lost. There is a great demand for all such men in connection with the design, manufacture, inspection, and maintenance of munitions and aircraft.

The Use of Engineer Inspectors of Performance in the Field.—There is insufficient direct touch between the users of engineering material in the field and the inspectors of workmanship in the factory at home. The latter should be supplemented by Engineer Inspectors of Performance in the Field, and the detail inspection should be carried out in the light of their experience. A modification of existing inspection procedure on these lines might do much to accelerate the construction of aircraft, but in order to carry it out it would be necessary to obtain suitable men from the Corps of Mechanical Engineers.

The formation of an Advisory Board of Contractors.—Much delay in the manufacture of engineering material has been caused by the unnecessary splitting up of contracts. The importance attaching to fundamental engineering difficulties carries too little weight in the minds of military administrators, and it would be the object of the Board of Contractors to emphasise the proper line of least resistance to the rapid output of engineering material.

In time of war Government Departments should be empowered to take manufacturers in their confidence, and arrange with them the most effective distribution of work. This is rendered all the more reasonable a procedure by the regulations regarding excess profits.

Lack of sufficiently close co-operation between official departments and the engineering contractors is one of the most serious adverse criticisms that can justly be made against the present administrations. I suggest that each department should establish an advisory board of its own principal contractors, with whom the allocation of work should be discussed.

This would surely have avoided such an anomaly as telling an aircraft factory to put down a plant for machining large shells, while a maker of large shells is asked to put down a new machine shop especially for aircraft work.

Before an engine or other similar unit can be produced in quantities, a most elaborate and costly collection of jigs and tools has to be prepared. If a contract is split up among several different makers, all this work has to be duplicated, and the difficulty of ensuring interchangeability is increased.

Under existing circumstances a contractor has to tender for what he happens to be asked to make.

Sometimes he is told that he is not required to do any more of the work for which he is equipped, when he is well aware that other firms have but recently been given contracts that will involve making a replica of his special plant.

Such policy may serve very well under the competitive conditions of peace, but it is wasteful in the extreme under the co-operative conditions of war.

The proportion of skilled labour available, to skilled work to be done, is steadily decreasing, and it behoves us to economise the engineering capacity of the country to the utmost. This can only be done by working under the conditions of maximum efficiency.

Sir D. Henderson: I am asking you a question. Have you any evidence that a private design has ever been submitted to the Royal Aircraft Factory?—I repeat what I have said before, that that is a manufacturers' question.

Sir D. Henderson: A definite statement is made here, and I deny it. Sir David added that statements of this sort put him and the administration in a false position. Every one of the statements made would be traversed.

The Chairman: We don't take it that you admit any of these statements. You will give your evidence later on.

Lord Montagu said there were two bodies of aircraft manufacturers who could send a representative or a memo and a n to the committee. Personally his concern was mainly with larger questions than this.

At this stage the Chairman intimated that the remainder of Lord Montagu's evidence dealt with matters which it would be desirable to raise in private, and the press was accordingly desired to withdraw.

The next sitting of the committee will be to day (Thursday).

The suggestions that I have made above would, I believe, conduce to this end, if carried into effect.

A. E. BERRIMAN,
Chief Engineer of the Daimler Co.

Coventry, May 17th.

An Airship Over Dublin.

DUBLIN had its first sight of a British airship on May 26th, one of these craft, flying the white ensign, cruised over the city for some time before returning seawards.

Exchanged R.F.C. Officers In Switzerland.

INCLUDED in the party of exchanged prisoners who reached Zurich from Germany on Tuesday are the following R.F.C. officers:—Capt. C. Darley, Lieut. William Reid and Lieut. Humphrey Goode.



Photo. by the Misses Collins.
CURIOUS TERMINATION TO A FLIGHT.—The above singular accident to a monoplane occurred at Goring, near Worthing. The pilot in attempting to turn failed to clear the trees, with the above result. Although the machine was damaged the pilot escaped unharmed.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

War Office, May 25th.
"Since the enemy's air attack on Port Said yesterday and to day he has been allowed little rest by the Royal Flying Corps. This morning advanced posts at Rodh Salem, El Hamma, Bir Bayud, Bir Salmana, and Bir el Mazar were heavily bombed by four of our machines.

"Forty bombs were dropped and had considerable effect. The buildings and plant at El Hamma were seriously damaged, while the water tanks at Rodh Salem were smashed by direct bombs.

"This will upset whole plan of enemy, as since the destruction of drilling plant at Jitjaffa by one of our patrols he has set great store on the waterworks at Rodh Salem.

"During the return journey the pipes leading to the petrol tank on one of our machines was perforated by a bullet. The airman was forced to descend in a wadi beyond our lines, but managed to repair the leak and return safely.

"According to the reports now received it is evident that the column consisting of troops who suffered heavily from the bomb attack on El Arish by the Royal Flying Corps on May 18th were Germans. This, perhaps, explains their hasty retaliation by dropping bombs on Port Said civilians.

"Further details of the naval bombardment of El Arish on May 18th have been received. Two monitors and sloop took part in the attack, their accurate fire being directed by seaplanes with great effect.

"Altogether thirty-four shells were fired by the heavy guns of the monitors, two of which were observed to hit the hangar on the aerodrome, while most of the remainder burst in the camp amongst the tents, causing the enemy to scatter in all directions."

In the despatch issued by the War Office, May 26th, regarding the fighting in the Soudan there was the following:—

"Before and during the action a valuable air reconnaissance was carried out by an officer of the Royal Flying Corps, who succeeded, by means of bombs and machine-gun fire, in forcing first a large body of hostile cavalry and then a body of some 2,000 infantry to retire in disorder. The officer was himself wounded by a bullet in the thigh, but returned safely to Abiad."

General Headquarters, May 27th.

"Hostile aircraft active on portions of our front yesterday. Fourteen enemy aeroplanes were engaged, and one was driven down inside the enemy's lines in a damaged condition."

General Headquarters, May 28th.

"Yesterday our aeroplanes, taking advantage of the fine weather accomplished much useful work. Hostile aeroplanes were inactive."

General Headquarters, May 29th.

"Fine sunny weather yesterday, suitable for aerial work. Much successful work was accomplished by us, and few German aeroplanes were seen."

French

Paris, May 23rd. Evening.
"In the region of Furnes a German machine, shelled by one of ours, was brought down in our lines. Near Beaumont an Aviatik, which was badly hit in the course of an aerial fight, fell in the enemy lines. In the region of the Linge one of our pilots attacked by three enemy aeroplanes brought down one of his adversaries, and put the two others to flight."

Paris, May 25th. Evening.

"In the course of a fight in the air one of our pilots brought down a Fokker, which fell in the enemy lines to the north of Vaux.

"In the region of Etain one of our air squadrons engaged a group of German machines, two of which were badly hit and compelled to land."

Paris, May 29th. Afternoon.

"Yesterday our pilots were engaged in fifteen aerial fights with German aeroplanes. Two of the latter were brought down. One fell in flames near Monthois (Argonne), and the other in the region of Amifontaine (north of Berry-au-Bac).

"During a range-finding flight one of our pilots was attacked to the north of the Aisne by a Fokker, which fired over 1,000 shots at him. In spite of this hail of bullets, and the fact that his machine was riddled, the pilot succeeded in getting back to his lines, pursued by his assailant. The latter was then attacked at a range of thirty yards by a French machine, which had come up at full speed, and was brought down near Bourgogne to the west of Rheims.

"On the left bank of the Meuse our motor anti-aircraft guns brought down two German machines which fell, the first to the north of Avocourt, and the second near Forges."

Russian.

Petrograd, May 27th.
"In many places enemy aeroplanes appeared. One of them was

struck by our artillery and was caused to come down near the village of Illukst.

"One of our submarines sunk off the shores of Anatolia a large Turkish brig, despite the firing from the coast and from an enemy seaplane."

Petrograd, May 29th.

"Our air squadron bombarded the enemy electric station at the town of Komay, north-west of Lake Narotch."

Italian.

Rome, May 24th.
"Enemy aeroplanes dropped bombs on Stazione della Carnia. There were a few victims, and slight damage was done."

Rome, May 26th.

"Enemy aeroplanes dropped bombs on Caltravo, Thiene and Latisana, killing and injuring a number of people, and doing some slight damage."

"One of our squadrons of Caproni aeroplanes bombarded the enemy positions between the Toara Valley and the Ars Valley. On the Ca'sso, at the height of Kostanjevica, one of our aeroplanes compelled an enemy Draken to descend rapidly."

German.

Berlin, May 23rd.
"An enemy aeroplane was shot down south-west of Vailly."

Berlin, May 25th.

"English torpedo and patrol boats have been attacked by German aeroplanes off the coast of Flanders."

"One enemy biplane was shot down in an aerial fight near St. Souplet, and another above Herbe Bois."

"Bombs have been dropped on Uskub and Ghevigli by enemy airmen without result."

"German aeroplanes on May 22nd attacked in the northern Aegean Sea, between Dedeagatch and Samothrace, an enemy squadron of four ships, and achieved two full hits. The enemy ships then withdrew in the direction of Imbros."

Berlin, May 29th.

"German aeroplanes successfully dropped bombs on the flying station at Furnes, Belgium."

Austrian.

Vienna, May 23rd.
"Our seaplanes dropped numerous bombs on the railway line between San Dona di Piave and Porto Gruaro."

Vienna, May 25th.

"One of our seaplane squadrons bombarded the railway station and military buildings at Latisano. On May 24th in the afternoon a squadron of our seaplanes bombarded the railway station, post-office, and barracks at Castel in Bari with visibly good success. The enemy's anti-aircraft fire was without effect, and all the seaplanes returned safely."

Bulgarian.

Sofia, May 27th.
"On May 24th hostile aeroplanes dropped a bomb on Ghevigli, south of the village of Petrove, without causing any damage. On the same morning five hostile aeroplanes appeared at Eskije and dropped several bombs on the town and its surroundings, wounding some inhabitants. Our air squadron attacked the enemy and forced him to retire. One of the enemy aeroplanes was badly damaged, and fell in Greek territory."

Turkish.

Constantinople, May 23rd.
"On Friday eight enemy aeroplanes appeared near the Dardanelles and dropped some 70 bombs without effect. One of our aviators twice attacked the enemy machines. The same night our seaplanes, in pursuit of enemy aviators, flew over the Island of Imbros and dropped nine bombs on the enemy's aeroplane sheds from a height of 2,000 ft. with good effect."

"In reprisal for the bombardment of El Arish, one of our air squadrons on Saturday night attacked Port Said and dropped numerous bombs on vessels at anchor and on the military posts in the town, causing large outbreaks of fire. In spite of the heavy firing from the enemy vessels and the land forces our airmen returned safely."

Constantinople, May 27th.

"Two enemy aeroplanes, which flew over Sod-el-Bahr and the Straits, were chased off in the direction of Imbros by the fire of our guns."

"Our artillery bombarded effectively the enemy airsheds on the island of Makronisi and the covered shelters and observation posts there and on the island of Lekim. Almost everywhere where our shells fell fires broke out and explosions were observed in the shelters."

From Other Sources.

Mr. Stanley Washburn, writing to the *Times* from Verdun, says:—

“Verdun itself is apparently hidden from the direct vision of the enemy, but ranges long ago corrected by aeroplanes have been established these many months. It is questionable, however, how much check the gunners have on the target at present, since it has become unhealthy for the German aeroplanes to show themselves in this vicinity in the day-time. There is no question that the French absolutely dominate the air at Verdun, for while I saw dozens of French aeroplanes sailing hither and thither at will, I did not see a single German machine during the entire day. . . .

“Leaving our observation point we motor back to the outskirts of the town, where the General shows us one of his anti-aircraft stations. Here are set up a number of 75's on special mountings. In the centre of the station, suspended on a small platform, is a brass bell. The moment an enemy machine is sighted the bell is sounded, and no matter from which direction it may be coming, every gun is on the target and the three corrections necessary for the first shot have been made within fifteen seconds. The mathematics are extremely interesting. A very intellectual young man, with a book of logarithms, a pad, and a pencil, undertook to explain to me how the ranging was done. While he was drawing neat triangles and polygons and painstakingly dropping perpendiculars here and there, the enemy dropped three shells not too far away, and I regret to relate that I cannot at this time recall a single one of the equations or figures which he so kindly worked out for my instruction.”

A Reuter message from Venice on May 16th says:—

“Yesterday evening, shortly before 9 o'clock, the look-out stations reported the approach of enemy aeroplanes.

“The alarm was immediately given. A raid was made upon Venice and Mestre. An intense fire from anti-aircraft guns prevented the assailants from descending upon the towns attacked, and thus diminished the effect of their bombs.

“In Venice only one private house was damaged, and no one was injured. At Mestre two persons were killed and a number slightly injured, and some very slight damage was done.

“At 10 o'clock the enemy aeroplanes, still pursued by the fire of our artillery, retired to their bases.”

The Salonica correspondent of the *Petit Parisien*, writing on May 16th, says:—

“A squadron of British aeroplanes left at dead of night and bombarded with complete success the town of Porto-Lagos. A number of fires were caused by the bombs which were dropped.

“French aeroplanes, fourteen in number, have bombarded at Xanthia Bulgarian concentrations to the north-east of the town. They dropped eighty bombs of large calibre causing wild panic. All the machines returned safely. German aeroplanes did not have time to retaliate in any way, as the action of the French squadron was so rapid and decisive.”

A correspondent of the *Telegraaf* announces that he has received information from the Belgian frontier which confirms the report that the French airmen Ramond and Maudrynaud, who are now interned in Holland, nearly destroyed a Zeppelin some weeks ago in an air battle above Bruges.

Mr. A. Beaumont, writing to the *Daily Telegraph* from Milan on March 17th, says:—

“Austrian aeroplanes again perpetrated night incursions over Venice, Mestre and Udine.

“Following the railway line from Venice to Mestre, they tried to drop bombs on an express train which had left Venice for Bologna at nine o'clock, and in which two Royal Princesses, Yolanda and Mafalda, were travelling. At the same time a Royal train with Queen Elena was coming from Udine, and entered the station of Mestre at half-past nine. The Royal Princesses at once entered the train of their mother, which started away. Reports of the anti-aircraft guns and bombs were heard as far as Padua, and when the Royal train reached that station with the Queen and Princesses there was quite an ovation in their honour, and they stood at the carriage windows, smiled, and thanked the crowd for their loyal demonstration.

“Just before dawn, about four o'clock in the morning, Udine was visited by a squadron of eight or ten aeroplanes, which had been able to approach treacherously at a great height, favoured by light clouds and mists. They dropped a number of bombs, and one



Aircraft Work in Mesopotamia.

In the papers regarding the Mesopotamian campaign issued by the India Office on Monday, in response to a question put in the Commons by Mr. Pemberton Billing, there are three references to aircraft work, two dealing with aviators' reports on the state of the Turkish troops at Suliman Pak; while in the third General Nixon says that he sent Major-General Kembell, by aeroplane, on

of these unhappily fell in the midst of a crowd of boys and youths who were standing in a little open place just outside the town and gazing at the sky. Eight of them, aged from 7 to 11 years, were instantly killed, and two others were severely injured.”

Mr. Edmund Candler, writing under date May 9th in the *Daily Telegraph* regarding the siege of Kut, says:—

“On January 2nd the first hostile aeroplane was sighted. From February 13th to March 22nd aviators' bombs caused more damage than shell fire. On March 18th one bomb fell on the hospital, killing six British soldiers and wounding twenty-six—fourteen severely—of whom four died. On March 21st four bombs were dropped in the neighbourhood of headquarters, killing many Arab women and children, and the aviator sank a horseboat on the river which carried a 4.7 in. gun. After this the aerial bombardment slackened, possibly through lack of ammunition.”

A Central News message from Amsterdam, on May 17th, says:—

“Another frontier correspondent confirms the reports sent yesterday regarding an Allied air raid in the Dixmude region. Two airmen dropped a number of bombs on various German fortifications and on railway stations in Flanders.”

The *Daily Mail* correspondent at Athens on May 17th reported:—

“Recently a British aeroplane flew down to a boat containing three Austrian officers just off Smyrna, blew up the boat with bombs, and killed two of the officers.”

According to the *Echo Belge*, an Allied aeroplane dropped five bombs on military stores near Roulers and escaped in spite of heavy German fire in the direction of Dixmude.

From Athens it is reported that an aeroplane, probably Austrian, flew over the Island of Rhodes on Monday and dropped numerous bombs on the Italian barracks. There is no news of the result of the raid.

Mr. Gerard Price, writing to the *Daily Telegraph* from Salonica, on May 17th, said:—

“French army mechanics are rebuilding, on the open space round, the ruins of the Zeppelin which, after great labour, have been extracted from the marshes and towed here in barges. The great bare ribs, spaced out with gaps between for exhibition purposes, look like the skeleton of some great pre-historic animal on view in a museum.”

According to a Central News message from Amsterdam, a Northern France correspondent states that in the meantime the Germans are strongly reinforcing their artillery, while the increasing activity of their airmen is becoming very marked.

Writing to the *Daily Telegraph* from Salonica, under date of May 19th, Mr. G. J. Stevens says:—

“During the night, a squadron of enemy aeroplanes crossed the frontier and threw bombs on our encampments at Topsin, Bunardja, and Kilkis, causing no damage and wounding only one soldier. They then attempted to come to Salonica, but by this time our own squadrons were up, and an aerial battle ensued, in which the enemy was driven back.”

“Our squadrons, pursuing, in their turn bombed important enemy encampments with, it is believed, good results, for flames followed by dense smoke were observed to rise. All our aeroplanes returned safely.”

The *Telegraaf* learns from the Belgian frontier that aviators bombed Zeebrugge about half-past 2 a.m. on May 21st. The explosions were clearly audible on the Dutch frontier, as was also the fire of defensive machine guns on the aeroplanes. Flashes of fire were seen above the Flemish coast. To-day, in splendid weather, a number of Allied aviators reconnoitred the German positions.

Writing from Milan to the *Daily Telegraph*, on May 21st, Mr. A. Beaumont says:—

“Vast aerial attacks are reported from various points adjacent to the Venetian plains, and a few victims are recorded. At Cividale and Moraro the enemy fled in the direction of Udine, and were driven off in consequence of the intervention of Italian aviators.”

The *Politiken*'s correspondent at Esbjerb states that some fishermen who have arrived there report that they met two armed German trawlers and a Zeppelin in the North Sea on May 20th.

It is possible, adds the correspondent, that the heavy cannonade heard about forty miles off the shore on May 20th was from British ships in pursuit.



October 19th and November 5th, from Kut to confer with Major-General Townshend.

The Lights of London.

A NEW Order has been issued by the Home Office regarding the reduction of lights, &c., in the Metropolis. It is the same as the Order issued in February, except for the time in which the regulations apply, which is now from ten p.m. until half an hour before sunrise.

SIR D. HAIG'S TRIBUTE TO THE R.F.C.

IN the despatch, dated May 19th, from Sir Douglas Haig, published on Monday, there are the following:—

" . . . In the air there is seldom a day, however bad the weather, when aircraft are not busy reconnoitring, photographing, and observing fire. All this is taking place constantly at any hour of the day or night, and in any part of the line. . . .

" I take this opportunity to bring to notice the admirable work which the Royal Flying Corps has continued to perform, in spite of much unfavourable weather, in carrying out reconnaissance duties, in taking photographs—an important aid to reconnaissance, which has been brought to a high pitch of perfection—and in assisting the work of our artillery by registering targets and locating hostile batteries. In the performance of this work they have flown in weather when no hostile aeroplane ventured out, and they have not hesitated to fly low under fire of the enemy's guns, when their duties made it necessary to do so. They have also carried out a series of bombing raids on hostile aerodromes and points of military importance. A feature of the period under review has been the increased activity of the enemy's aircraft, in suitable weather. But the enemy's activity has been mainly on his own side of the line, and has aimed chiefly at interrupt-

ing the work carried out by our machines. In order to carry on the work in spite of this opposition, which was for a time rendered more effective by the appearance in December of a new and more powerful type of enemy machine, it has been necessary to provide an escort to accompany our reconnaissance aeroplanes, and fighting in the air, which was formerly exceptional, has now become an everyday occurrence.

" The observers, no less than the pilots, have done excellent service, and many fine feats have been performed by both. Developments on the technical side of the Air Service have been no less remarkable and satisfactory than the progress made on the purely military side. Much inventive genius has been displayed; and our equipment for photography, wireless telegraphy, bomb-dropping, and offensive action generally has been immensely improved, while great skill has been shown in keeping the flying machines themselves in good flying condition."

Among the units mentioned as having been specially brought to the notice of Sir Douglas Haig for good work in carrying out or repelling local attacks and raids are the following:—

No. 2 Squadron R.F.C.
No. 6 Squadron R.F.C.

⊗ ⊕ QUESTIONS IN

Air Raid Casualties.

IN the House of Commons on Monday Mr. Herbert Samuel gave, in answer to Mr. Kellaway, the following details of the casualties in air raids in this country:—

Number of attacks	Men.	Women.	Children.	44
Killed...	222	114	73	
Injured	1,005	

These figures differ slightly from the totals of those published from time to time owing to the fact that some persons reported as injured subsequently died, and a few additional cases of injury of a minor character not known to the police at the time were afterwards reported.

The Air Board.

ON May 24th, Mr. Joynson-Hicks asked whether the Air Board has any control over or responsibility for the personnel and discipline of the Royal Naval Air Service and the Royal Naval Anti-Aircraft Service; whether the new Air Board has any powers in relation to anti-aircraft gunnery, and, if so, what; whether the new Air Board has any control over or responsibility for the Royal Aircraft Factory; and whether the new Air Board has any responsibility for or power over the defence of London from hostile aircraft?

Major Baird (*representing the Air Board*): The question of the exact powers to be exercised by the Air Board over Services or establishments still under the control of other Departments is one

⊗ ⊕ Correspondence for the R.N.A.S.

THE Secretary of the Admiralty announces that letters and postal parcels for the Royal Naval Air Service stationed abroad should be addressed as follows: (1) Official number (if known); (2) rank or rating; (3) name; (4) unit, *e.g.*, "No. 2 Wing," "No. 3 Kite Balloon Section," "Airship Detachment, No. 2," or, if serving in one of H.M. ships, give the name of the ship; (5) care of G.P.O. The words "Mediterranean Expeditionary Force" should not be used in the address of letters to units on the Mediterranean station.

The rates of postage to R.N.A.S. abroad are:—

Letters, 1d. per oz.; postcards, 1d. each; newspapers, ½d. per 2 oz.; parcels not exceeding 3 lbs. 1s., over 3 lbs. and not over 7 lbs. 1s. 9d., over 7 lbs. 2s. 6d.

The following R.N. Air Service Squadrons have been given numbers, as shown:—Wing Commander Gordon's Squadron, No. 6 Squadron; Squadron Commander Cull's Squadron, No. 7 Squadron; Squadron Commander Nanson's Squadron, No. 8 Squadron.

Correspondence for officers and men serving with these squadrons should be addressed to the respective squadron numbers.

Correspondence should not be sent to the Admiralty or Air Department to forward.

Naval Flyers' Pay.

IT is announced that certain naval officers are to receive an allowance for adjusting the compasses of aircraft of 2s. 6d. for each machine; and officers performing the duties of senior lieutenant at certain air establishments and stations are to receive senior allowance of 1s. 6d. a day where the numbers borne are not less than 350.

⊗ ⊕ PARLIAMENT.

that cannot be defined at the present moment, before the Air Board has commenced its work. They will depend very largely upon interdepartmental arrangements, and will be developed as time proceeds.

Mr. Joynson-Hicks also asked whether the new Air Board will present Estimates in this House, or whether the expenditure of such Board will be borne on the Navy or Army Votes?

Major Baird: The answer to the first part of the question is in the negative. The intention is that any expenditure incurred by the Air Board should be defrayed direct from the Vote of Credit.

Mr. Joynson-Hicks asked what opportunities there would be of criticising the expenditure of the Air Board?

Major Baird: There will be full opportunity on the Vote of Credit.

Mr. Joynson-Hicks asked under what power the new Air Board could develop its own body with a regular department under it, or was the Board to be confined to thinking about such development?

Major Baird: Any proposals that the Air Board may make for the development of its own functions or department under the terms of the reference, which have already been communicated to the House, will be addressed to the War Committee.

The Air Raid Insurance Scheme.

REPLYING to Mr. Snowden, Mr. Runciman states that the aircraft insurance scheme, which came into operation last July, has at present money in hand, but that the position may change at any moment. He does not propose to increase the rates, but it would not be wise to reduce them.

⊗ ⊕ Fatal Accidents.

WHILE flying for his certificate at Hendon, on May 24th, Mr. A. C. Mahoney fell to the ground, the machine side-slipping, apparently owing to a turn being attempted while climbing, while the machine was not sufficiently high to recover itself. A verdict of "Accidental Death" was returned.

On the following day Second Lieut. J. A. Ruck, R.F.C., was killed. The machine descended in a field, overturned and caught. The pilot was, however, thrown clear of the flames, but died a few hours later from fracture of the skull. The jury returned a verdict of "Accidental Death."

On Saturday a machine piloted by Second Lieut. R. Newman, R.F.C., was noticed to be out of control, and it fell to the ground in a spinning nose dive from a height of 300 ft. Second Lieut. Newman, who had had three months' service in France and had been recommended for promotion, was so severely injured that he died on his way to hospital, while the passenger, Second Lieut. Bayly Brayn, died the same evening.

While a biplane, piloted by Capt. G. A. Grime Jones, was ascending from a flying ground in Kent on Sunday morning it was caught by the wind and side-slipped at a height of about 120 feet. The pilot was killed instantly, and the passenger, Second Lieut. Tennant, R.F.C., son of the Under-Secretary for War, was seriously injured.

Lieut. R. H. Le Brasseur, R.F.C., was fatally injured in a motor car accident near Aylsham, Norfolk, on May 23rd. The deceased, who was on sick leave from the front, was motoring to Norwich when a tyre burst, causing the car to collide with a house.

PERSONALS.

UNDER the above heading will be published weekly particulars of a personal character relating to those who have fallen or have been wounded in the country's service, announcements of marriages and other items concerning members of the Flying Services and others well known in the world of aviation. We shall be pleased to receive for publication properly authenticated particulars suitable for this column.

Casualties.

Second Lieutenant MAURICE DUNCAN BASDEN, Queen's Westminsters, attached R.F.C., who was killed in an aerial combat, at the age of 21, on May 20th, was the younger son of Mr. and Mrs. Duncan F. Basden, of 20, Thurlow Road, Hampstead.

Lieutenant GILBERT DENNIS GRUNE, R.F.A., attached R.F.C., news of whose death has been received through the British Red Cross Society from Geneva, was educated at South Lodge, Lowestoft, and Steyning Grammar School. For three years he was a pupil with Messrs. Vickers at Erith, and had just completed his pupillage and passed his inter-B.Sc. at London University, when his battery was mobilised at the outbreak of war. He went to France with the battery in November, 1914, and was present in several engagements. In 1915 he was transferred to the Royal Flying Corps, and took his "Wings" on September 2nd of that year, being posted to a squadron in the following November. He served as a pilot and was killed on March 13th while on reconnaissance. He was the son of Dr. Edward Grune, Temporary Captain, R.A.M.C., of The Hall, Southwick, Sussex, and grandson of Captain E. H. Chawner, 77th Regiment, of Newton Valence, Hants, a Crimean veteran still living, and possessor of the Legion of Honour gained at the taking of the Redan.

Captain GERALD BLUNT LUCAS, Indian Cavalry, attached R.F.C., who has died of wounds received in action, was the youngest son of the late Lieut.-Col. C. A. de N. Lucas, Indian Army, and of Mrs. Vyvyan Williams, Oakley, Teignmouth, Devon, and was 25 years of age.

Lieutenant ORMOND GEORGE HAKE, whose death is reported, was the younger son of Mr. and Mrs. Edwin Denys Hake, of Hailey School, Bournemouth, and was educated at his father's



Another Barimar Welding Job.

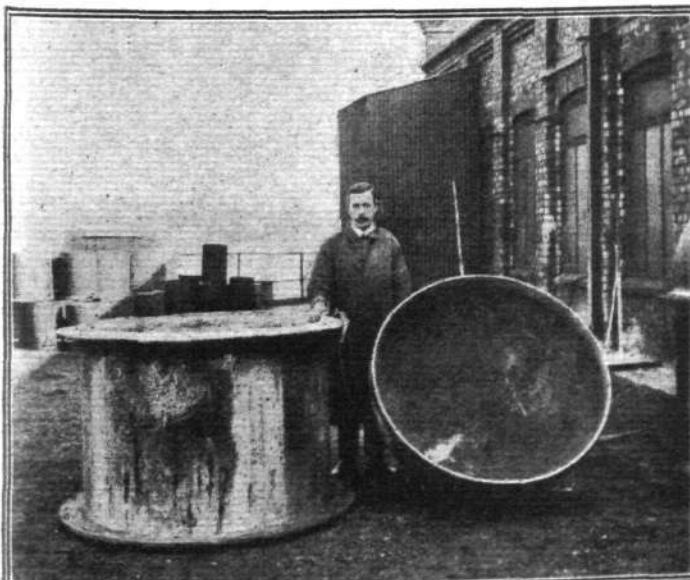
FROM time to time reference has been made in these columns to the efficiency and economy of the Barimar system of welding, and we have just received details of another instance of these facts. Recently the owners of large works on the Tyneside had disabled two valuable aluminium pans, weighing a ton, and costing nearly £400. Unfortunately, owing to the war, they could not be replaced, and although the firm keeps its own welders they are not specially trained for the handling of aluminium. On a previous occasion they had sent a fractured vessel of the same kind 400 miles by sea to a firm in London, incurring heavy expenses, to say nothing of the loss resulting from the inevitable delays in transhipment in war time. And the experiment of having one pan treated by a local firm was not a success. Wishing to avoid a repetition of the trouble, the owners decided to apply to Messrs. Barimar, Ltd., 10, Poland Street, Oxford Street, London, W., for specialists to be sent up to the Tyneside and weld the two aluminium vessels in the firm's own works.

school and at Eastbourne College. He was captain of the cricket team for two seasons and a member of the football fifteen, and was to have been head of the school had he not answered Lord Kitchener's call for officers in August, 1914, at the age of 17. In September he received a commission in the 12th Hants Regiment, but he never joined his regiment. His heart was set on flying, and he seized a chance that came to him of entering the R.F.C. He met with a serious accident at Netheravon last June, which kept him out of work for nearly six months. But his nerve was not affected. He resumed his flying as soon as he was allowed, and was testing machines as they came from the factory when he met with his fatal accident.

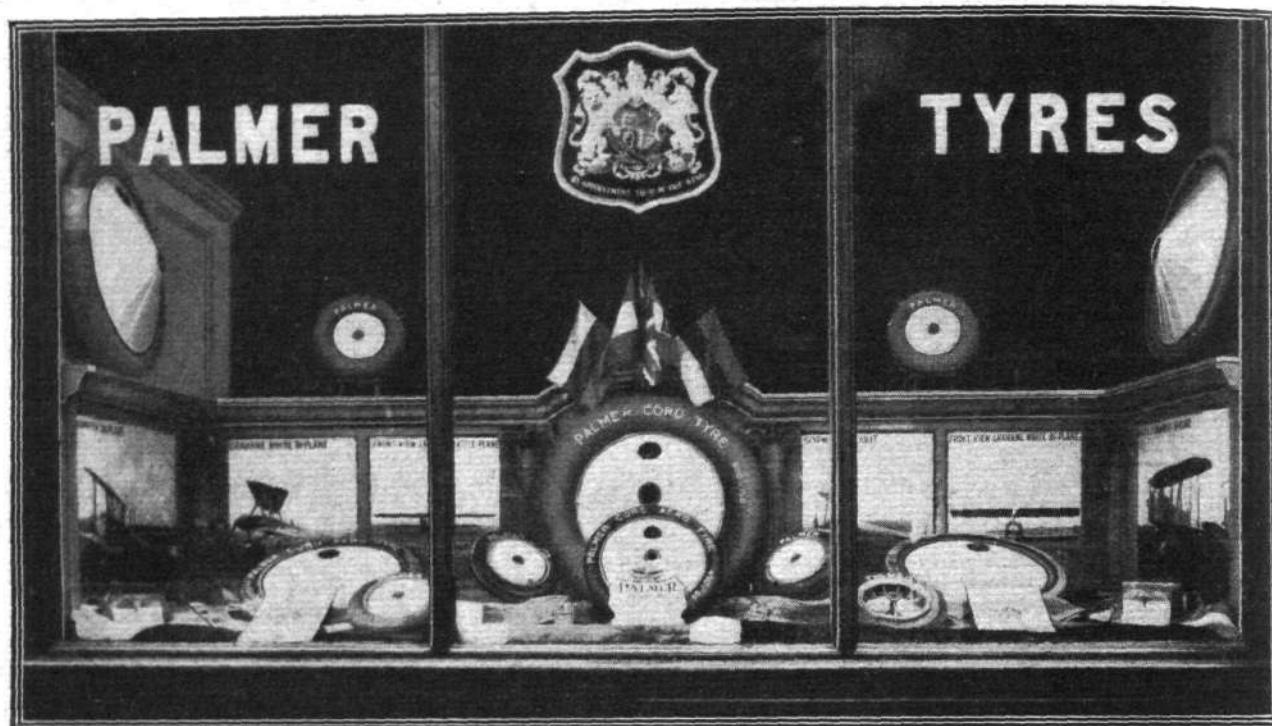
Lieutenant ARTHUR PENROSE SELWYN, who was killed while flying on May 18th, was the third son of the Rev. Dr. Selwyn, of Hindhead, and late Headmaster of Uppingham School. He was born in 1889, and was educated at Uppingham School, where he was a sergeant in the O.T.C. In 1910 he went to a tea estate in India, and while there joined the Assam Valley Light Horse. On the outbreak of war he obtained a commission in the 11th (K.E.O.) Lancers, I.A.R., and proceeded to France in May, 1915. In July he was attached to the Royal Flying Corps as an Observer, and was present at the battle of Loos and assisted in hospital work, after which he was invalided home. In November, 1915, he married Eileen, only daughter of Mr. George Grabham, of Belize, British Honduras. In January, 1916, he began his training in England as a pilot in the Royal Flying Corps, and on May 16th received his "Wings" at Upavon. He was a fearless rider and possessed an almost magical touch with a horse, and won many prizes in races in India. His twin brother—Second Lieutenant C. W. Selwyn, of the 5th Leicestershire Regiment (T.F.)—died of wounds at Bailleul, on May 19th, 1915; and he has three brothers now serving in the army.



We learn that the result was an entirely successful repair, while what is still more satisfactory the cost of the repairs to the two pans by the Barimar process was exactly the same as the cost of the repairs to one pan in London by the other firm. Thus, the Barimar service saved the firm not only £400 but half the cost of the repairs, to say nothing of the amount saved by the absence of shipping delays and freight charges. The two photographs show the repairs "before and after," and an idea of the size of the job can be gathered from the man standing by. Mr. C. W. Brett, the managing director and general manager of Messrs. Barimar, Ltd., says that to skilled Barimar experts the work presented no special difficulty, and sure of the results of their process, the firm readily gave their usual guarantees as to perfect treatment. Any damaged part in any metal or alloy, from smashed crank cases, gear boxes, or cracked cylinders, to the most intricate machinery, can be similarly dealt with, and the success of the system is shown by the fact that the firm is extensively engaged on much Government work and many orders from munition and municipal undertakings.



BEFORE AND AFTER.—Two views of a large aluminium pan which was recently repaired by the Barimar process. On the left the pan in two pieces, and on the right the repair in progress.



Unique aero window display by the Palmer Tyre Co. at 119-123, Shaftesbury Avenue, W.C.

Bombs, &c., from Hostile Aircraft.

THE Secretary of the War Office makes the following announcement: With reference to the Order in Council of the 10th May, amending the Defence of the Realm Regulations, the War Office request that the public will render assistance by notifying at once to the military authorities, or to a police constable in the neighbourhood, the finding of any bomb or projectile or fragments thereof, or any other article discharged, dropped, or lost from any enemy aircraft or vessel.

Gilbert Free Again.

IT is reported from Paris that Gilbert has again succeeded in escaping from Switzerland, where he has been interned. The *Petit Parisien* states that after sliding down a ventilating shaft at the prison he left Zurich, dressed as an old peasant woman. It will be remembered that he escaped in August last, but was sent back by the French Government, as the Swiss authorities stated that they had not received his notification that he had withdrawn his parole. He made another attempt on February 5th, but was rearrested in a train.

Flight by Spanish Prince.

WRITING from Madrid on Sunday, the *Daily Telegraph* correspondent says: The War Department carried out an aeroplane test yesterday between Madrid and Cartagena. Amongst the competitors was the Infante don Alfonso, King Alfonso's cousin. The Infante Alfonso accomplished the journey in one flight, lasting three hours and twenty-one minutes. He thus beat the Spanish long-distance record. The Infante Alfonso married Queen Victoria's cousin, Princess Beatrice of Saxe-Coburg-Gotha. The Prince started on the return journey to-day, but was obliged to come down at Albacete owing to a strong head-wind.

Germany and Spies.

ACCORDING to the *Telegraaf* ten people have been sentenced to death and nineteen to penal servitude at Brussels for belonging to an organisation for obtaining and communicating to the enemy information concerning Zeppelin sheds or troop movements. Three of those condemned to death, including two telegraph officials, have been shot, while the others have had their sentences commuted to hard labour for life by the Kaiser's clemency.

A Transposition of Type.

BY an unfortunate transposition of a paragraph in our leader last week, possibly some of our readers were somewhat mystified. The slip was discovered in time for correction in the greater part of our issue, but for the guidance of those into whose hands an uncorrected copy has fallen, the arrangement should be as follows:—

The last paragraph of the leader (eight lines) should follow immediately after the words "by way of a makeshift" appearing thirty-one lines from the top of the same column.

For Ball Bearings, Repairs, &c.

THOSE who are in the market for ball bearings of any type should make a note of the address of Messrs. Laurence, Norris and Co., of Imperial Buildings, 56, Kingsway, W.C., who carry a large stock of ball bearings in all sizes and for every purpose. A copy of their list giving full details as to dimensions and prices can be obtained on request. Apart from the supply of new bearings, the firm have also a department devoted to repairs of all types of ball bearings.

Another speciality of the firm is an electric hand drill, which has proved very successful in shipbuilding yards and motor factories, and which should also find favour in aeroplane factories. An important point is that the firm are in a position to give delivery from stock.

Timber for Aeroplanes.

SOME interesting particulars of the Engineering Timber Co., Ltd., of 9, Victoria Street, S.W., appear in a short article in the *Business World* from which it emerges that specialisation in the timber trade, as in other great branches of supply, has taken its cue from the development of modern industries. So in the rapidly growing aeroplane industry where timber is so largely used it has been necessary to bring special knowledge to bear, and prolonged experiments and practical tests have served to determine the woods most suitable for various purposes. The Engineering Co., Ltd., have specialised successfully in this direction, and the managing director, Mr. J. E. Huson, is always ready to place his expert knowledge at the service of clients. The company has extensive stocks of silver and West Virginia spruce, hickory, English ash, mahogany and walnut at their stores at Silwood Road, Rotherhithe, S.E. There are two branches in France—one at 64, Quai de Point du Jour, Paris, and the other at Billancourt.



[Several regular features have again to be held over owing to Parliamentary pressure on our space.—ED.]

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